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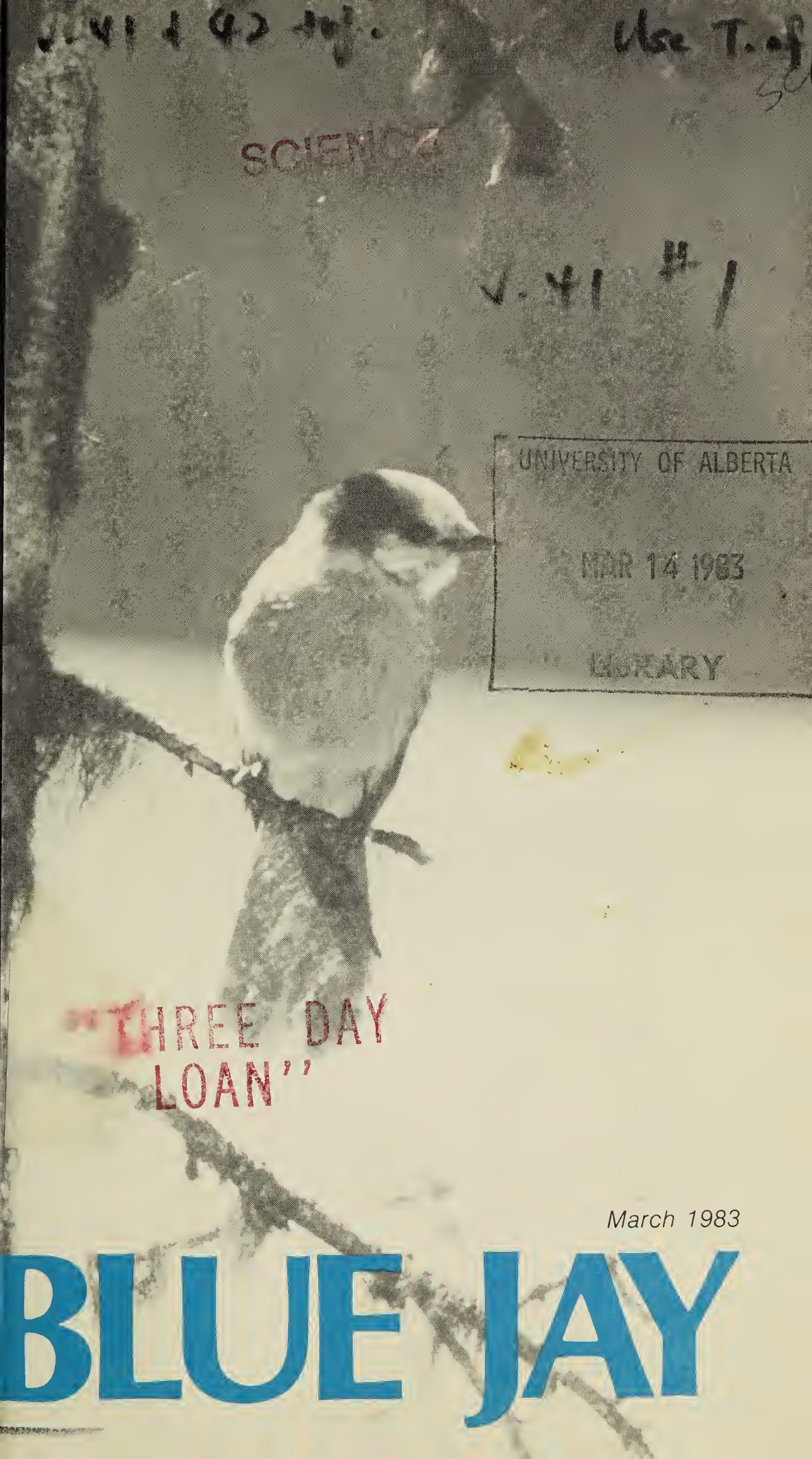

March 1983

BLUE JAY

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MEMBERSHIP RENEWALS

If you have not renewed your membership and do not wish to miss any issues of Blue Jay please renew now. Renewal forms appeared in the December 1982 issue. If you do not have the forms please remit your membership (classes as given on the inside front cover) to the Treasurer at Box 1784, Saskatoon, Saskatchewan. S7K 3S1

SPRING SKIES 1983

STANLEY J. SHADICK, Dept. of Physics, University of Saskatchewan, Saskatoon, Saskatchewan. S7N 0W0

This spring will be an excellent time for viewing the planets. The five naked eye planets (Mercury, Venus, Mars, Jupiter and Saturn) will all make appearances during this period. As a special bonus, Uranus will pass very close to Jupiter in mid-May and can therefore be located quite easily with binoculars. A guide to use when looking for these planets is given below. The charts and times have been calculated for an observer near Saskatoon but should apply with very small error to anywhere in southern Saskatchewan.

Venus

Visible: March to early July. Except for the Moon, Venus is the brightest object in the evening sky. It will be easily seen in the western sky for about 2 hours following sunset. As Venus orbits the sun, it goes through phases similar to the Moon. In July, a spotting scope or rigidly held binoculars should reveal the crescent phase.

Mars

Visible: early March. Throughout 1983 Mars will be on the far side of the sun and hence will be relatively faint and small in size. It can be spotted in early March if you have an unobstructed view of the western horizon. Look for it about 1 hour after sunset as it will set shortly thereafter. It will be located about 9° below and 5° to the right of Venus. (For reference purposes, a closed fist at arm's length covers an angle of about 10°). With binoculars, Mars should appear as a small reddish dot (Figure 5).

Mercury

Visible: late April. Being the innermost of the nine planets, Mercury is usually too close to the sun to be easily observed. A rare chance to spot this planet occurs during the last half of April. You should have an unobstructed view of the WNW horizon and look for it 45-60 minutes after sunset. Figure 1 indicates the position of Mercury 1 hour after sunset on April 22. Be careful not to confuse Mercury with Venus which is much brighter and is located about 20° to the upper left of Mercury.

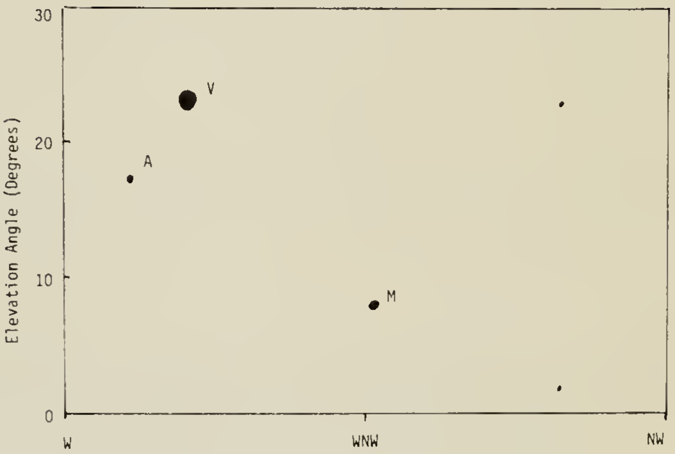


Figure 1. *WNW Sky at 9:15 p.m. 22 April. Letters indicate positions of Venus (V), Mercury (M) and the red giant star Aldebaran (A).*

Saturn

Visible: March to September. In mid March Saturn rises about 10:30 p.m. By mid April it rises about 2 hours earlier and will be easily seen in the late evening sky. Figure 2 shows the position of Saturn above the southeastern horizon at midnight on 15 March or at 10:00 p.m. on 15 April. Do not confuse Saturn with Spica, the bright first magnitude star which rises one-half hour earlier.

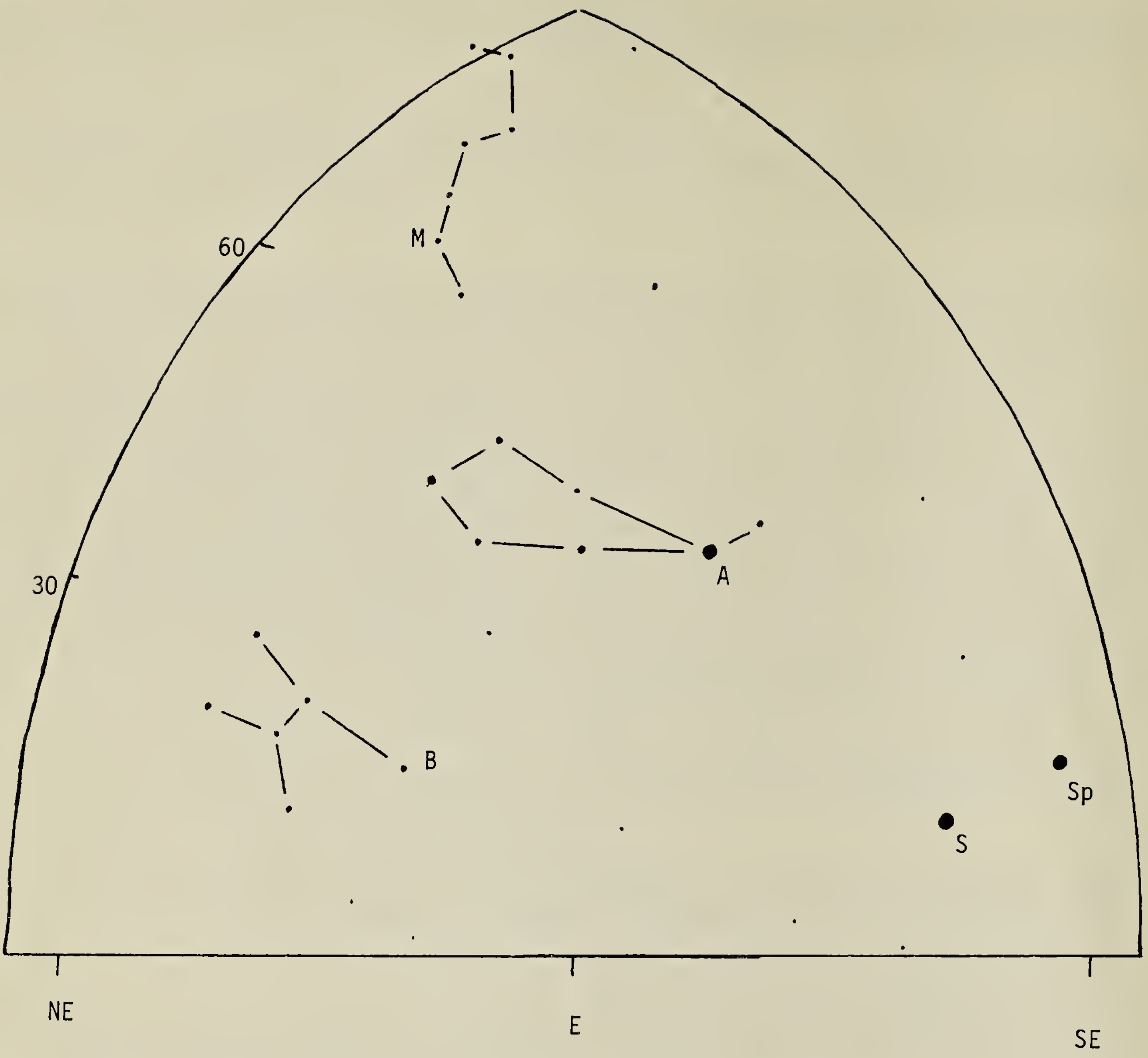
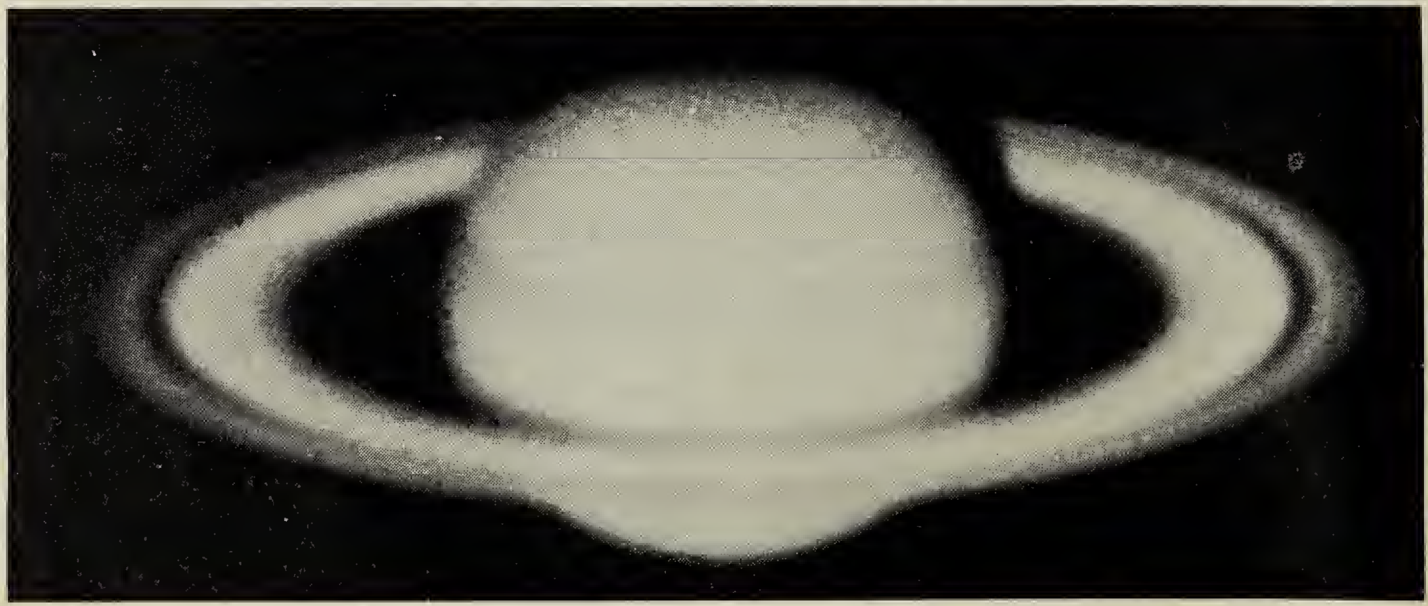


Figure 2. *Eastern Sky at 12 p.m. 15 March or 11 p.m. 1 April* or *10 p.m. 15 April. Letters indicate positions of Saturn (S) and the stars: Spica (Sp) in Virgo constellation; Beta Hercules (B) in Hercules; Arcturus (A) in Bootes; and the binary Mizar (M) in Ursa Major. The zenith is at the top of the diagram. Elevation angles are given at the side.*



Planet Saturn, sixth from the sun. *Hale Observatories*

A spotting scope (and some binoculars) will show the spectacular rings surrounding the spherical planet. The Voyager spacecraft determined that the rings are composed of thousands of particles of dust or ice, each of which orbits Saturn in the same plane.

A scope should also reveal Titan, the largest of Saturn's 15 moons. It appears as a faint dot at up to 5 ring diameters separation from Saturn. As Titan revolves around Saturn once every 16 days, its position will change slightly from night to night. Occasionally it will be hidden behind Saturn itself. Under ideal conditions a small telescope may reveal Rhea, a fainter tenth magnitude moon at a separation of less than 2 ring diameters from Saturn.

Jupiter

Visible: March to October. Because of its gigantic size, Jupiter is brighter than all other planets except Venus. During March and April Jupiter can be seen low in the southwest before sunrise. In mid May it rises about 10:00 p.m. and will be visible in the late evening sky. Figure 3 shows the location of Jupiter at midnight on 15 May (or at other times and dates listed). Even

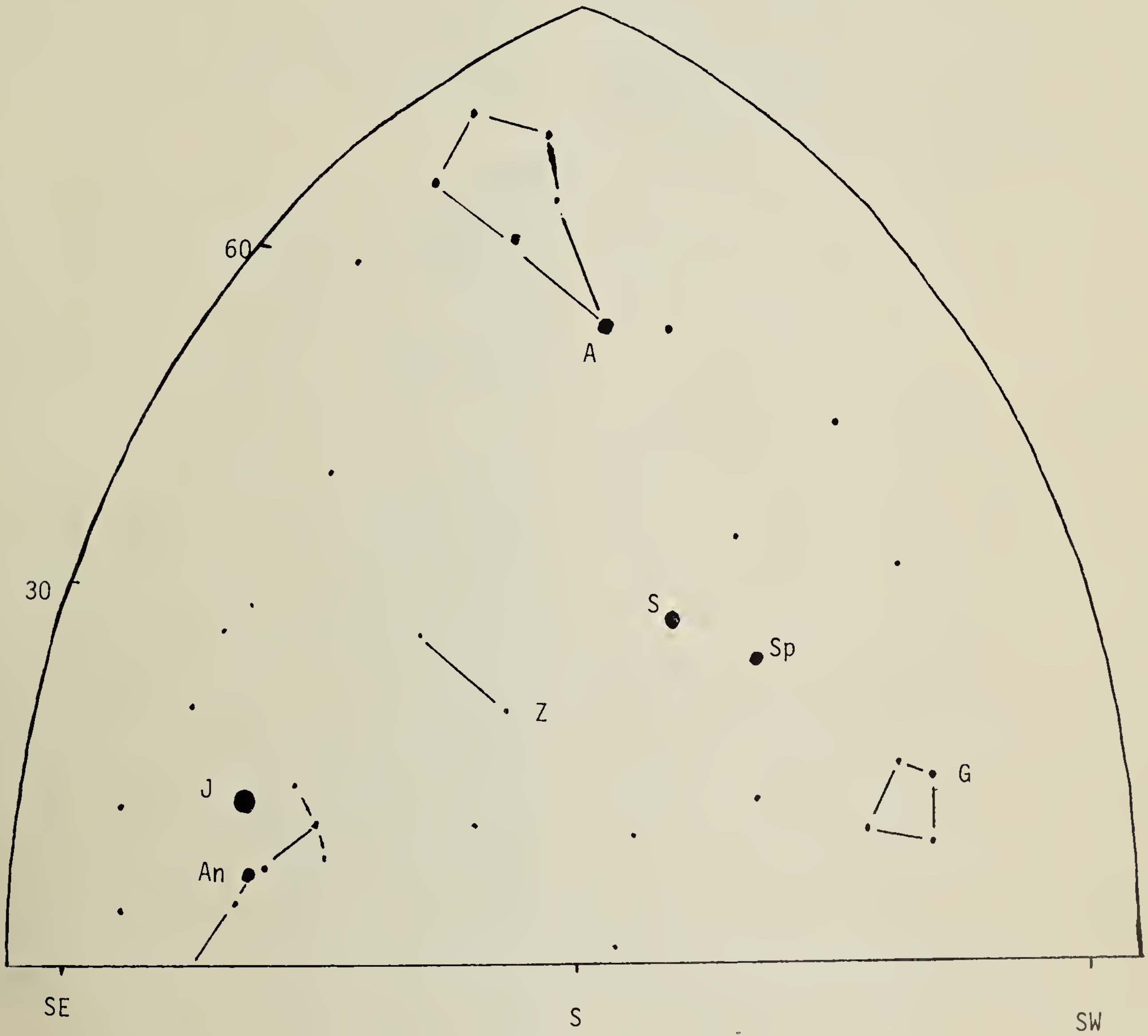


Figure 3. *Southern Sky at 4 a.m. 15 March* or *2 a.m. 15 April* or *12 p.m. 15 May* or *10 p.m. 15 June. Letters indicate positions of Jupiter (J), Saturn (S) and the stars: Arcturus (A) in Bootes constellation; Spica (Sp) in Virgo; Gienah (G) in Corvus (the Crow); Zubenelgenubi (Z) in Libra; and Antares (An) in Scorpius.*

though it had risen two hours earlier, it is still only 13° above the SSE horizon. Be careful not to confuse Jupiter with Saturn which rises about 4 hours earlier.

Once you have found Jupiter, look at it with a rigidly held pair of binoculars or a spotting scope. You can then make out the spherical shape of the planet. In addition you should be able to see some of the four moons of Jupiter which were discovered by Galileo. Their names are Io, Europa, Ganymede and Callisto. They should all appear in a straight line on either side of Jupiter. If you observe these moons on successive evenings, you should notice that their position changes as they orbit Jupiter. This effect is especially noticeable for Io, the innermost of the 4 moons, which completes one orbit of Jupiter in 42.5 hours. Occasionally one or two of the moons will not be visible if they are hidden on the far side of Jupiter or if they are directly between Earth and Jupiter.

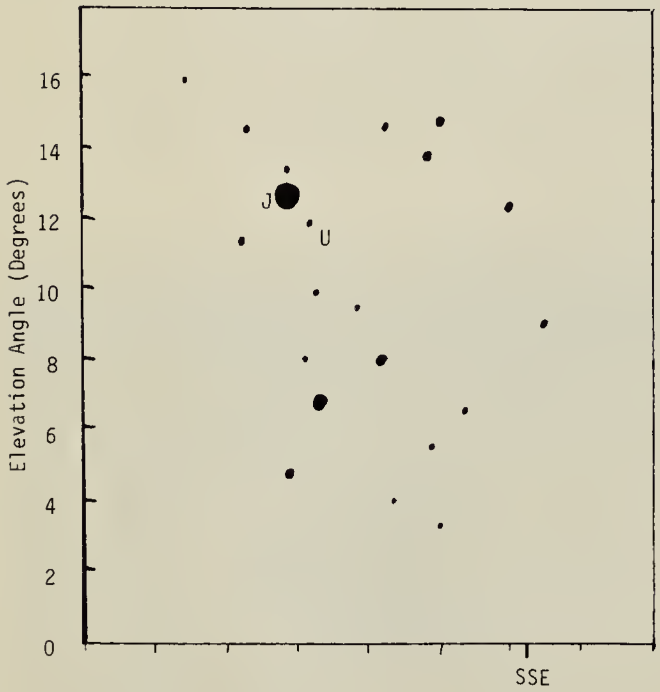


Figure 4. *Enlarged Binocular View of Jupiter region from Figure 3. Letters indicate positions of Jupiter (J) and Uranus (U).*

Uranus

Visible: March to October; best date: 15 May. Although Uranus can be easily seen with a pair of binoculars, few people have ever done so. The problem is that Uranus is a relatively faint fifth magnitude planet and must be distinguished from the hundreds of stars with similar brightness. This year it should be fairly easy to locate as it passes within a few degrees of the very bright planet, Jupiter. Figure 4 shows the position of Uranus as seen with binoculars at midnight on 15 May. On this date it is only 0.9° to the lower right of Jupiter. Be careful; Uranus will be of similar brightness to Jupiter's moons but its separation from Jupiter will still be at least 10 times that of Callisto, Jupiter's outermost moon. A good spotting scope at high magnification should reveal Uranus to be a very small greenish disk, 1/12 the size of Jupiter.

Stars

Sirius, the brightest of all the stars in the night sky is shown in Figure 5. The reason for its dazzling brilliance is that it is very near, only 8.7 light years (1 light year equals 9.5 trillion km). In fact it is the nearest star visible from Canada without using a telescope.

Other stars appear relatively bright, not because they are nearby, but because they radiate much more light than average stars. Most of these stars are old stars which have expanded so much in size that their radius approaches the distance from the Earth to the Sun (150 million km). As they expand, their colour reddens, so astronomers classify them as red giants. Stars of this class which have been identified in the figures include Aldebaran and Arcturus. With binoculars you should be able to detect their reddish colour.

Stars, which are much more massive than the Sun, will expand in old age to an even greater size than giants. Such rare stars are classified as supergiants and can be seen easily from very great distances. Rigel in Orion is an example of a blue supergiant at a distance of 900 light years. The stars, Antares and Betelgeuse are examples of very red supergiants.

The Pleiades is a cluster of stars easily seen by the naked eye. They appear to be in the shape of a tiny dipper and some people mistake them for the Little Dipper constellation (Ursa Minor). The Pleiades are believed to be very young stars, each of which has condensed out of the same gas cloud.

Almost all of the objects which have been described above are visible with the naked eye or with binoculars. Of course an improved view can be obtained with a telescope. Visitors to Saskatoon (and residents!) are welcome to visit the observatory on the university campus any clear Wednesday evening, throughout the year — no appointment necessary.

[1] BISHOP, ROY. Editor, Observer's Handbook 1983, Royal Astronomical Society of Canada, 124 Merton St., Toronto.

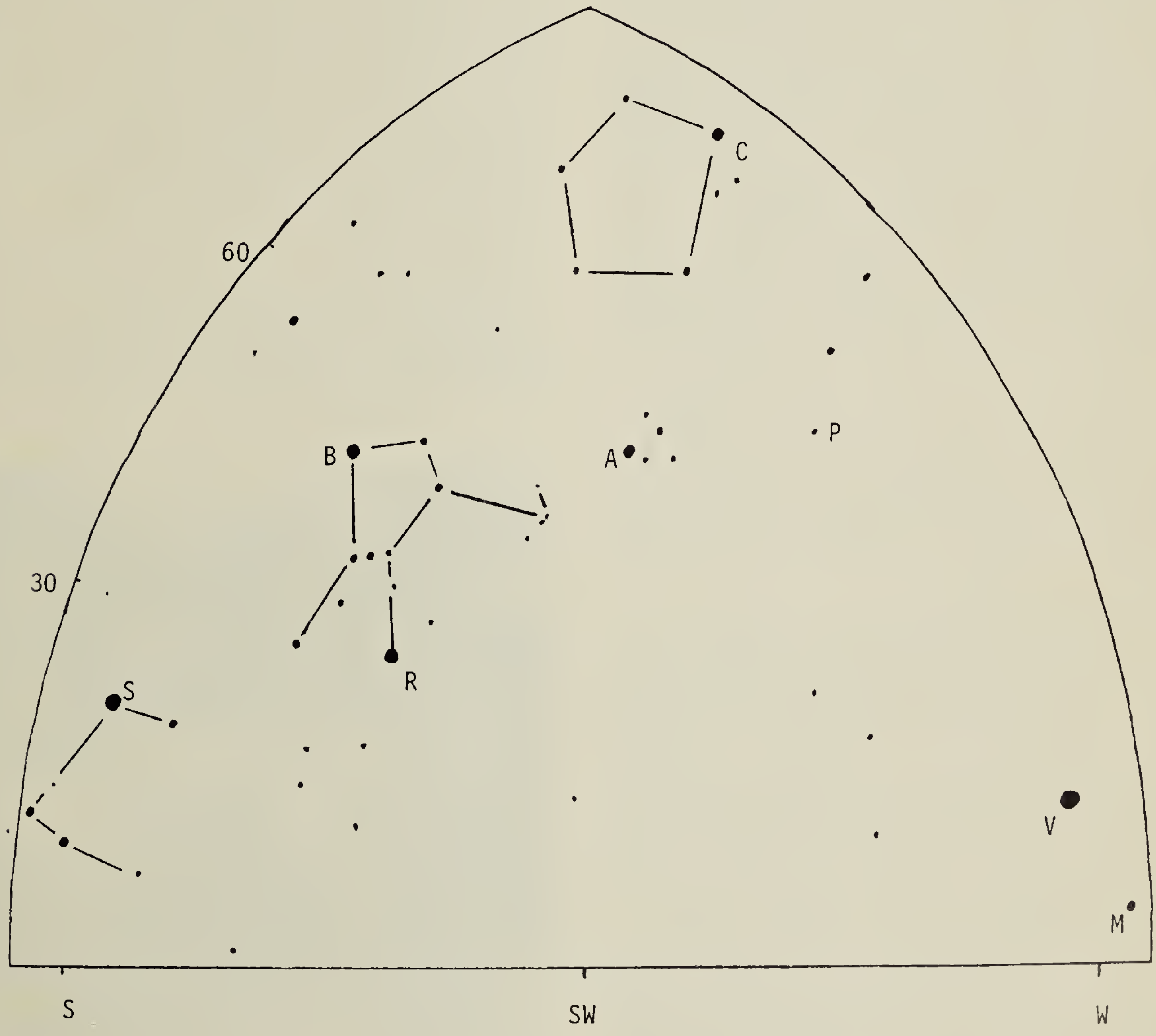


Figure 5. *SW Sky at 8:30 p.m. 15 March. Letters indicate positions of Venus (V), Mars (M) and the stars: Capella (C) in Auriga constellation; Betelgeuse (B) and Rigel (R) in Orion; Aldebaran (A) in Taurus; and Sirius (S) in Canis Major. The Pleiades cluster is shown by "P".*

DISPERSAL OF THE PEARLY EYE BUTTERFLY AT THE PAS, MANITOBA

WALTER KRIVDA, Box 864, The Pas, Manitoba. R9A 1K8

I have known of the presence of the Pearly Eye (*Enodia portlandia borealis* (Clark)) in The Pas area for almost 30 years now. It is a shy species of shaded woods, taken now and then along Grace Lake, east of town.

It was something of a surprise to Paul and Franklin Chermock in 1962 when they visited here to find it this far north in Canada. It was therefore, a greater surprise this summer to find for the first time the Pearly Eye ranging widely, and out of its woodland habitat. The cool, overcast summer may have encouraged this wider local dispersal. A specimen was taken in the author's backyard in mid July fully three miles away from its native woodland habitat where even in an average year, a good deal of hunting is needed even to see an individual.

The Pearly Eye was also seen in Preachard's woods across from the Scott Bateman Collegiate in town. This also is three miles away from its usual area of occurrence.

Mr. Phil Reader took a specimen of the Pearly Eye at Reader Lake in July. This is an area from which it has never been seen before. It is also an unlikely habitat. The area is underlain by sands grown over with Jack Pine and White Spruce. The specimens may have originated from the sedge meadow bordering Reader Lake at this point.

Only in 1962 was the Pearly Eye abundant in this area, that being an acre or so of ground at Big Eddy on the bottom slopes of the hill going down to Pike Lake, an area that has a sunny exposure but is well timbered. Generally speaking with the above exception it is a scarce butterfly in The Pas area.

The summer was so cool in The Pas area that for the first time in a quarter of a century, tomatoes failed in gardens in town. This is a fairly sensitive and observable signal of weather change. The previous year was also below normal in summer heat. Cool overcast summers may well affect the dispersal of shade loving species of butterflies.

To reverse the thinking, the sudden dispersal and establishment of shade loving butterfly species could be used as corroborative information of a drop in normal summer heat and normal sun light intensity. This may well be worth looking into, in some detail. The volcanic dust in the upper atmosphere and local forest fires last year may have blocked sufficient heat energy from reaching the ground to have produced this local response in the Pearly Eye.

Pearly Eye *D. Hooper*

A NEW SASKATCHEWAN RECORD FOR ADDER'S-MOUTH

DONALD F. HOOPER, Box 40, Somme, Saskatchewan. S0E 1N0

Last summer Ernie Sauer from Regina came to our place and was interested in fishing. So on 9 August I took him north on the Fir River road in the Pasquia hills (north from Highway No. 3, five mi. west of Hudson Bay). The road was fairly good to Mile 15 campsite. From there on it was terrible with ruts and mudholes. After going as far as I dared I parked the car. Ernie was intent on catching brook trout, but I didn't bring any fishing tackle along as I was interested in looking for plants.

We followed a pathway through poplar woods down into the river valley. As we got on lower ground we came to a black spruce swamp which extended along the river for a considerable distance. There were thick growths of willows overhanging the river. The water was rippling and splashing over the rocks. What a peaceful spot!

Ernie tried fishing for a while but with no luck. I said "let's go upstream further, maybe we can find a better place" (always a fisherman's dream, of course). Then I proceeded to lead the way along a path winding through the Black Spruce woods. The moss was a luxuriant green, as the whole area was moist and cool from little springs, and pools of water. After a while Ernie called out, "Wait a minute, my line is tangled up." While waiting on Ernie to get out of his difficulty I made a little circle around looking at the vegetation. Back from the path a short way was another spring. It was a pool about three feet across. Along the edge of the pool were a few small orchids. Right away I noticed that they had only one leaf which was partway up the stem. I knew that I had found one of the species of the rare Adder's Mouth (*Malaxis* sp.). There were about twenty plants in all; they were in such a small patch that a single moose could have flattened the whole works down at one time, if it lay on them. I collected a few plants to press for the Fraser Herbarium, at the University of Saskatchewan in Saskatoon.

I then went to see what Ernie's problem was, and I found that he was in real trouble. His fish hook had caught on a stick away back in the woods, and most of his line was out. The line in the rod had twisted loops in about seven places. After we got this straightened out he was able to reel his line in again. It was a bad experience for Ernie, but it was good for me. If he hadn't had trouble, I wouldn't have circled around and found the rare Adder's Mouth.

After Ernie got fishing again, I looked all through the immediate area but could not see any more plants of the orchid. I did find, however, a small patch of Creeping Snowberry (*Gaultheria hispidula* (L.) Muhl.). This species has been listed as rare in Saskatchewan.[1] I also collected a sample of this for the Fraser Herbarium.

Upon returning home I checked the Adder's Mouth in my plant books. I found it to be White Adder's Mouth (*Malaxis monophyllos* (L.) Sw. var. *brachypoda* (Gray) Morris & Eames), the floral lip being deflected, pointed, and not lobed.[2] My identification was verified by Dr. Harms when I sent him the specimen for the Fraser Herbarium. This species is rare in the prairie provinces. It has only previously been found in Saskatchewan in the central part of the province, from Waskesiu to

Prince Albert and MacDowall.[3] In Manitoba it has been found in the south-central region in three localities, Grandview (1950), Lake Winnipegosis (1881) and Treesbank (near Brandon, 1914).[4] There are possibly other, more recent, Manitoba records of this species of which I am not aware.

Well Ernie didn't get any fish, but the trip was very rewarding in the finding of more rare plant species in our area. Not to mention of course the ever-rewarding experience of roaming around in our beautiful mixed woods, and enjoying the various aspects of nature.

[1] HARMS, V. L. 1978. Preliminary checklist of rare and potentially endangered native vascular plants of Saskatchewan. The Fraser Herbarium, Dept. of Plant Ecology, University of Saskatchewan, Saskatoon, Sask.

[2] LOOMAN, J., K. F. BEST. 1979. Budd's Flora. Research Branch, Agriculture Canada Publication 1662.

[3] MAHER, R. V., G. W. ARGUS, V. L. HARMS and J. H. HUDSON. 1979. The rare vascular plants of Saskatchewan. National Museum of Natural Sciences. Syllogeus No. 20. Ottawa, Canada.

[4] SCOGGAN, H. J. 1957. Flora of Manitoba. National Museum of Canada, Bulletin No. 140, Ottawa.

PEACH-LEAVED WILLOWS IN SASKATCHEWAN

DON MacPHEDRAN, 1419 - 1st St. East, Prince Albert, Saskatchewan. S6V 0E6

The Prince Albert district may have the largest willow trees in Saskatchewan.

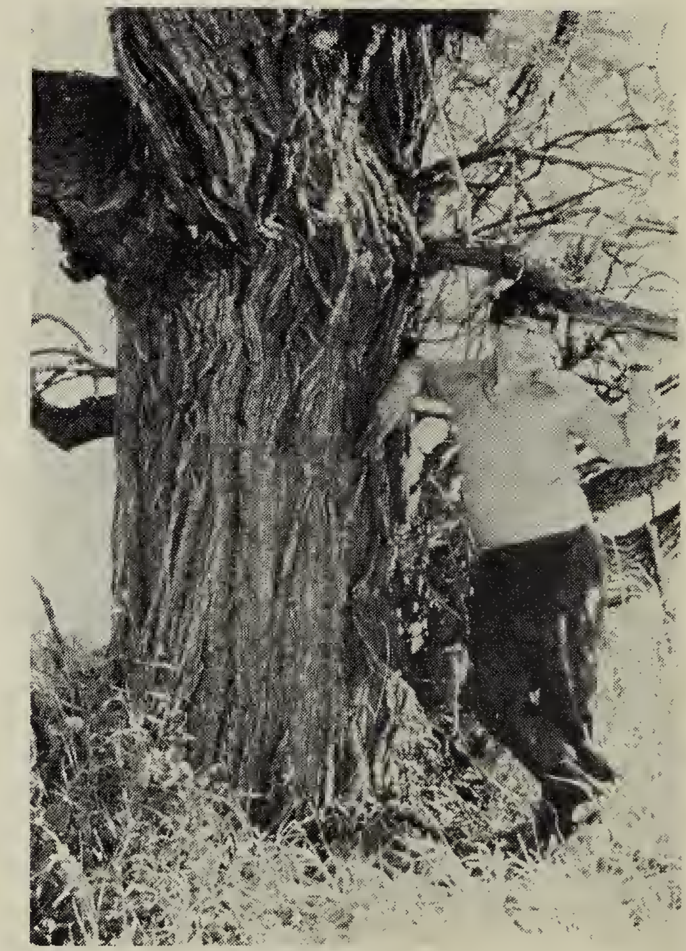
Brought up from Ontario and planted in 1895 three Peach-leaved willows (*Salix amygdaloides* Anderss.) have grown to huge sizes in the Prince Albert district.

Located on the farm of Tom and Mary Robins 16 mi. east of Prince Albert the largest has a spread of 82 feet and 10 inches, the second largest has a spread of 63 feet and 9 inches and the third has a spread of 55 feet and 9 inches. The largest trunk has a circumference of 11 feet measured 4 feet above ground level.

Although the Peach-leaved willow is native to Saskatchewan, it is not common.

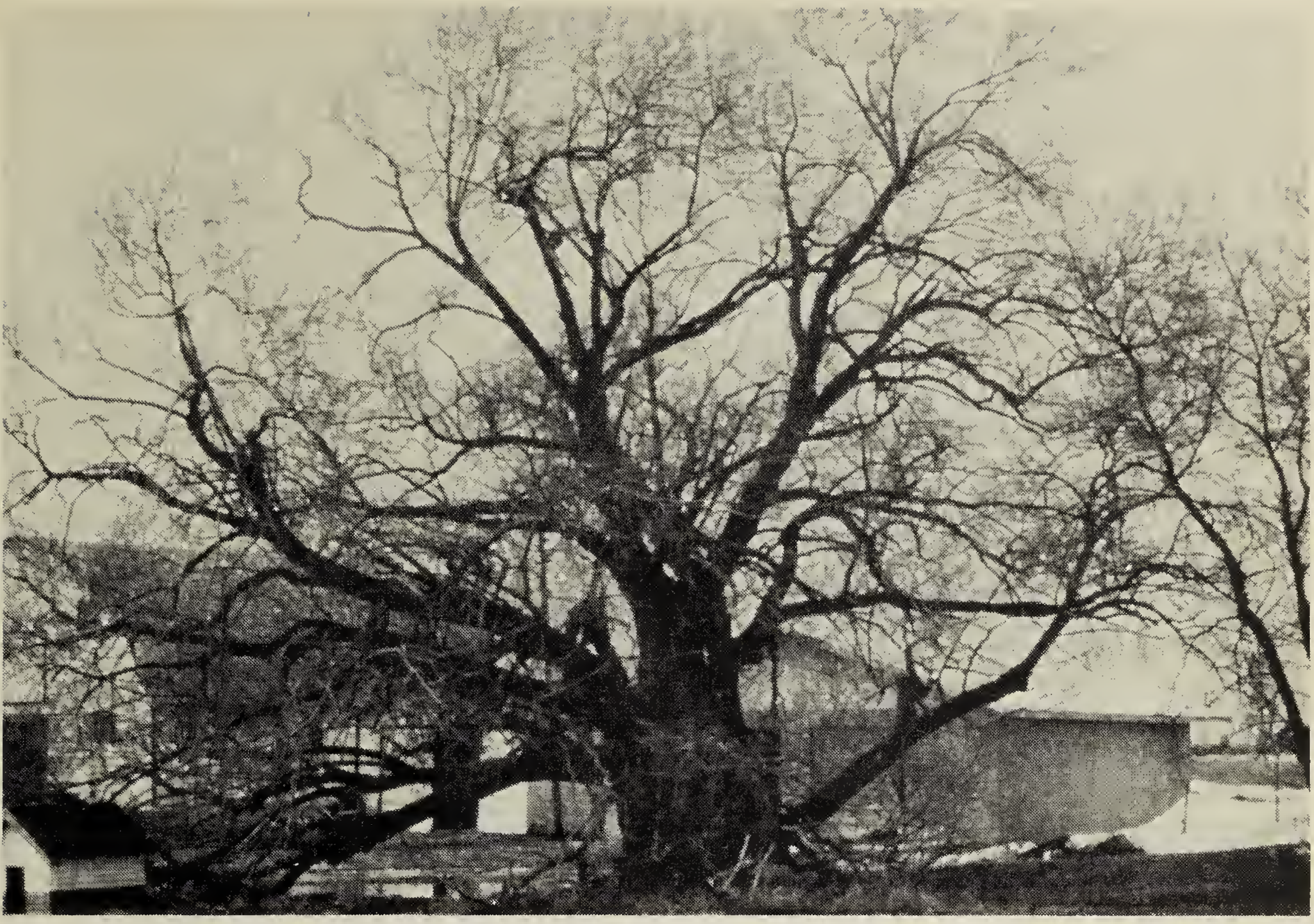
The Prince Albert district trees are growing on sandy loam soil; they have survived many wind storms and at least one bad hailstorm. One survived a grass fire. They are now 87 years old, appear to be healthy and should survive for many years to come.

I would appreciate hearing from anyone that may know of larger trees.

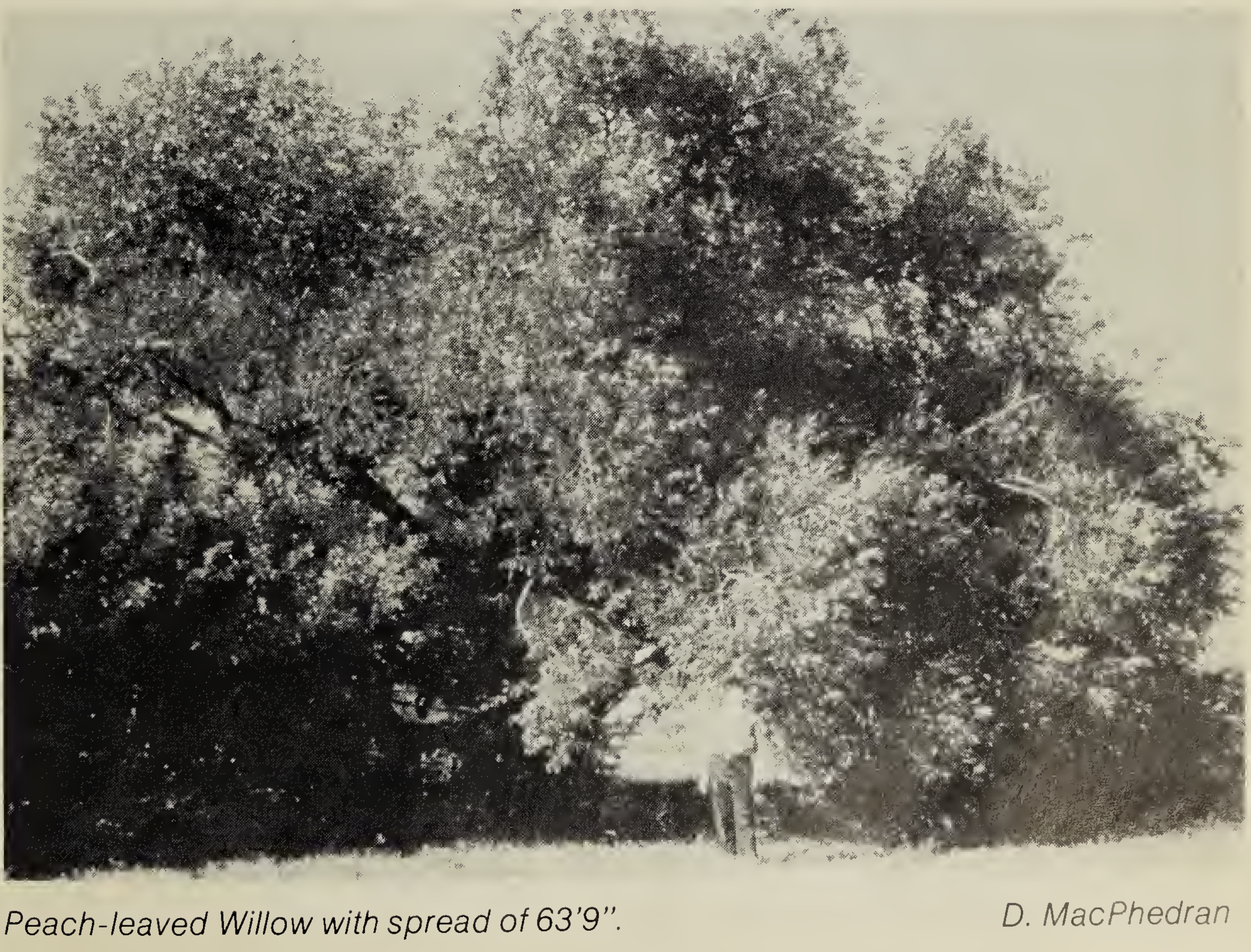


Willow with trunk circumference 11' at 4' above ground.

D. MacPhedran



Peach-leaved Willow with spread of 82'10". D. MacPhedran



Peach-leaved Willow with spread of 63'9". D. MacPhedran

41st ANNUAL SASKATCHEWAN CHRISTMAS BIRD COUNT — 1982

Compiled by MARY I. HOUSTON, 863 University Drive, Saskatoon, Saskatchewan. S7N 0J8

The weather over the 1982 Christmas Bird Count period (18 December 1982 to 2 January 1983) cooperated with bird counters, enabling counts to be taken in 63 localities. The total number of species recorded on count days was 77, with 2 additional species seen during count period but not on count days. This is the 4th highest count over the 41 years (79+4 in 1974; 78+4 in 1981; 76+5 in 1979). Saskatoon had the highest number of species over count period with 35 (34+1 additional). Fort Walsh reported 32 (31+1); Regina, 30 (28+2); Squaw Rapids, 28 and Gardiner Dam, 27.

Three new species were recorded: 1 Common Loon was seen at Gardiner Dam and 1 Killdeer and 1 McCown's Longspur were seen at Govenlock. This brings the all time total of Count Day species to 136 plus 2 races and 6 additionals seen during Count Period but not on Count Day.

Only Fort Walsh reported Hoary Redpolls (15). Common Redpolls were low being reported from only 9 of the 63 localities. Bohemian Waxwings were down both in number of localities reporting and in numbers seen; on the other hand numbers of Cedar Waxwings increased with 9 reports. Saskatoon and Moose Jaw had 75 each and Regina, 36. Cedars outnumbered Bohemians in Regina and Skull Creek, and only Cedars were seen in Moose Jaw. Pine Grosbeak numbers were down, with only 12 localities reporting them.

Exceptionally large flocks of Snow Buntings (reported from 54 of the 63 localities) were seen at Govenlock (6183), Kutawagan Lake (9483), Last Mountain Lake (12944) and Raymore (33935).

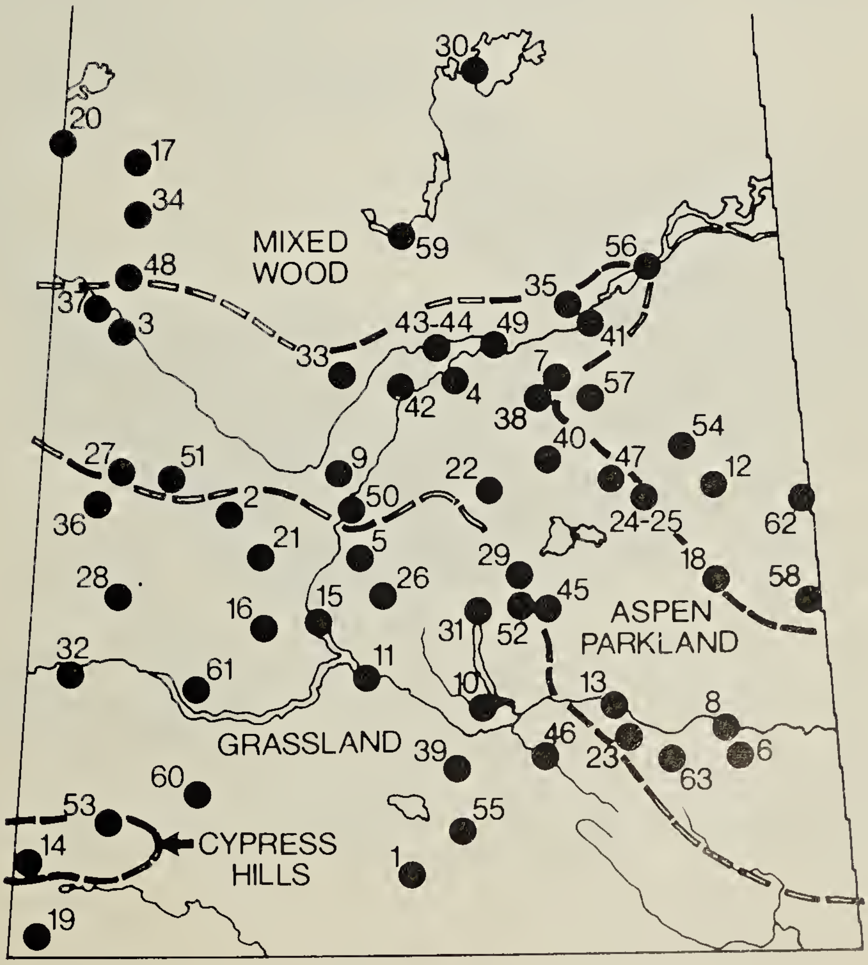
After the list of participants from the 63 localities, Table 1 gives the Coverage and Weather; Table 2 gives species reported in more than 3 locations and gives numbers of each species seen in each locality on count day, with numbers for additional species seen during count period indicated with a + sign; Table 3 gives numbers and locations of species seen in 3 or less locations during Count Period; Table 4 gives locations and numbers of birds not positively identified as to species.

Count Areas and Participants

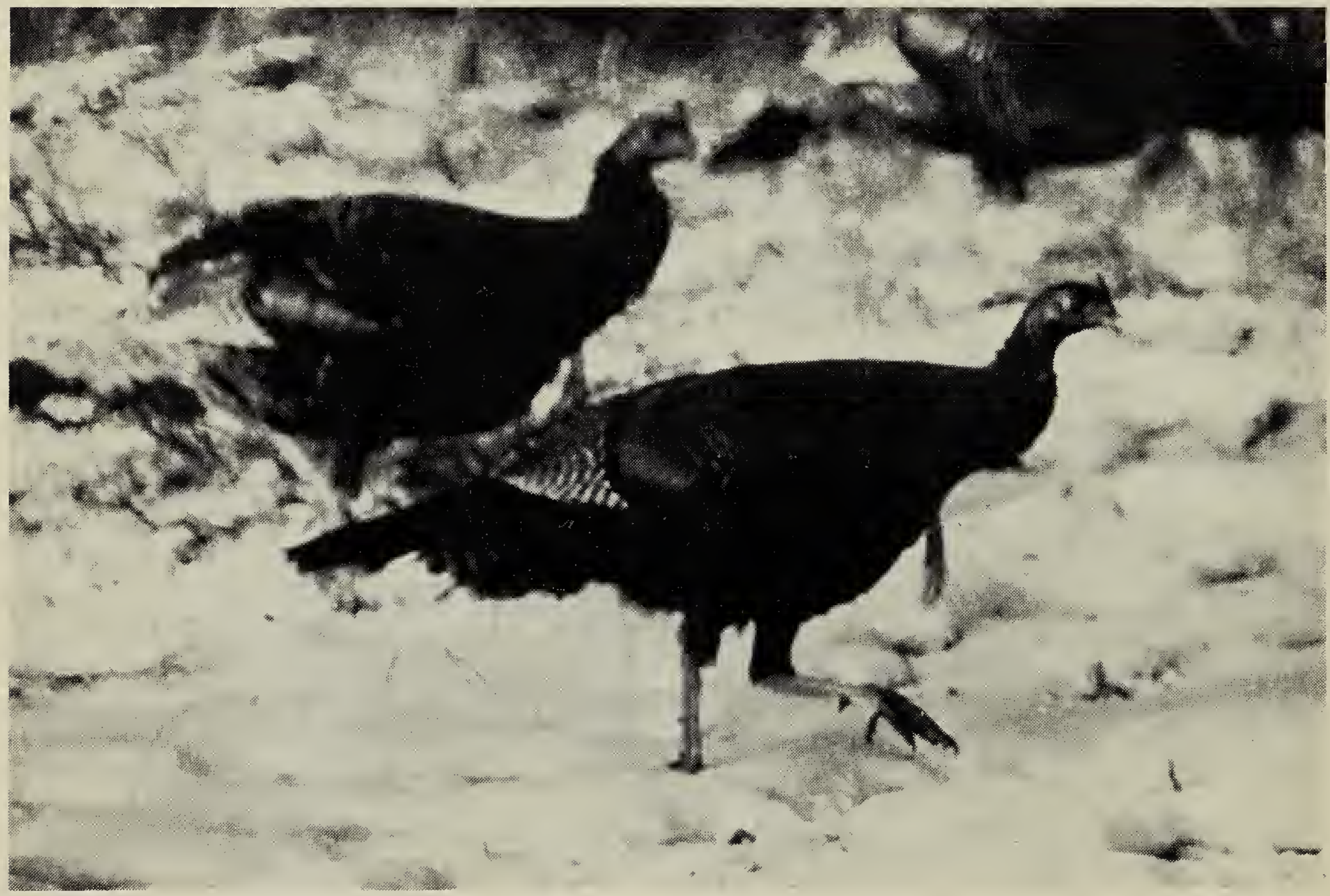
Names of compilers in italics.

1. ASSINIBOIA. Carol and Ed Bearss, Murray Brunt, John G. Burgeson, Alex Duxbury, Gordon Forsythe, *Cecil T. Hayward*, Nelson Lamb, Don Lemond, Don Lewis, Ted McMorrine, Wilf Prentice, Ken Schuweiler.
2. BIGGAR. Harvey Renaud, Wayne Renaud, *Guy Wapple*, Robert Wapple.
3. BIG GULLY CREEK. *Wayne Harris*, Sheila Lamont, Tom Lamont.
4. BIRCH HILLS. Terry Toews, *Don Weidle*.
5. BRIGHTWATER RESERVOIR. Linda Lahey, *Alan R. Smith*.
6. BROADVIEW. *Doug Francis*, Joe Grimeau, Pat Kern.
7. BROOKSBY. Bert and Vi Ross.
8. CROOKED LAKE. *Don Weidl*, Tony Weidl.

1. ASSINIBOIA
2. BIGGAR
3. BIG GULLY CREEK
4. BIRCH HILLS
5. BRIGHTWATER RESERVOIR
6. BROADVIEW
7. BROOKSBY
8. CROOKED LAKE
9. DALMENY
10. DILKE
11. ELBOW
12. ENDEAVOUR
13. FORT QU'APPELLE
14. FORT WALSH
15. GARDINER DAM
16. GLAMIS-WISETON
17. GOODSOIL
18. GOOD SPIRIT LAKE
19. GOVENLOCK
20. GRAND CENTRE (Sask.-Alta.)
21. HARRIS
22. HUMBOLDT
23. INDIAN HEAD
24. KELVINGTON
25. KELVINGTON
26. KENASTON
27. KILLSQUAW LAKE
28. KINDERSLEY
29. KUTAWAGAN LAKE
30. LA RONGE
31. LAST MOUNTAIN LAKE
32. LEADER
33. LEASK
34. LOON LAKE
35. LOVE-TORCH RIVER
36. LUSELAND
37. MAIDSTONE BRIDGE
38. MELFORT
39. MOOSE JAW
40. NAICAM
41. NIPAWIN
42. NISBET FOREST
43. PRINCE ALBERT
44. PRINCE ALBERT
45. RAYMORE
46. REGINA
47. ROSE VALLEY
48. ST. WALBURG
49. SASKATCHEWAN FORKS
50. SASKATOON
51. SCOTT
52. SEMANS
53. SKULL CREEK
54. SOMME
55. SPRING VALLEY
56. SQUAW RAPIDS
57. TISDALE
58. TOGO
59. WASKESIU
60. WEBB
61. WHITE BEAR
62. WHITEBEECH
63. WOLSELEY SOUTH



9. DALMENY. Lorne Sperling, *Lloyd Sperling*, Mara Sperling.
10. DILKE. *Margaret Belcher*, Doug Laing.
11. ELBOW. Ron Jensen, Dan McIntosh, *Alan R. Smith*.
12. ENDEAVOUR. Norman Harris.
13. FORT QU'APPELLE. Doug Evans, Alma Hiebert, Selma Hiebert, David Hooper, *Ron Hooper*, Alice Laing, Lois Lamontagne, Victor Lamontagne, Don McDougall, Fern McDougall, Raymond Mlazzar, Lorne Rowell, Kay Ruard, Eileen Smith, Clinton Wilde, Flo Wilde.
14. FORT WALSH. Chris Adam, Dixie Black, Bob Godwin, Wayne Harris, Dale and Paule Hjertaas, Bob Kreba, Sheila Lamont, Kathy Meeres, Wilkes Parsonage, Wayne Renaud, John Triffo, *Guy Wapple*, Robert Wapple, Jack Wilkinson.
15. GARDINER DAM. Wayne Harris, Sheila Lamont, Wayne Renaud, *Guy Wapple*, Robert Wapple.
16. GLAMIS-WISETON. Brian H. Jones, *Grev. L. Jones*.
17. GOODSOIL. Catherine, David and Richard Morton.
18. GOOD SPIRIT LAKE. *Bill Anaka*, Joyce Anaka.
19. GOVENLOCK. Chris Adam, Tom Buchanan, *Wayne Harris*, Dale Hjertaas, Paule Hjertaas, Bob Kreba, Sheila Lamont, Wayne Renaud, Bill Russon, John Triffo, Guy Wapple, Robert Wapple.
20. GRAND CENTRE (Sask.-Alta.) J. F. Roy
21. HARRIS. *Guy Wapple*, Robert Wapple.
22. HUMBOLDT. *Ed Brockmeyer*, Dwayn Saretsky.
23. INDIAN HEAD. Susan Adams, Les Anderson, Betty and Cec Ashmore, Marg Barclay, Isabel and Peter Barrett, Margo and Vic Beaulieu, Yvonne Brown, Mavis and Roger Gray, Jim Halford, Don Hayward,



Wild Turkeys at Fort Walsh CBC *W. Harris*

Gordon Howe, Roy McLaughlin, Doris Pals, Mariel Peterson, *Lloyd Peterson*, Marg Quigley, Joan and Lorne Scott, Gertrude Scott, Fred Skinner, Mary Skinner, Ron Thompson family, Ann and Gordon Willerth, Shaun Williamson.

24. KELVINGTON, Dianne Sloan.
25. KELVINGTON. James Donovan.
26. KENASTON. P. Lawrence Beckie.
27. KILLSQUAW LAKE. Linda Lahey, *Alan R. Smith*.
28. KINDERSLEY. Jean Harris.
29. KUTAWAGAN LAKE. Len Harding, *Wayne Harris*, Sheila Lamont.
30. LA RONGE. Jim Paul.
31. LAST MOUNTAIN LAKE. *Wayne Harris*, Sheila Lamont.
32. LEADER. Daisy D. Meyers.
33. LEASK. *Muriel Carlson*, Page Porter.
34. LOON LAKE. P. Davis, G. Pedersen, *F. Scott*, M. Williams.
35. LOVE-TORCH RIVER. *Bert Dalziel*, Joan Dalziel, Bruce Donovan.
36. LUSELAND. E. J. Finley, K. B. Finley, *K. J. Finley*, B. Holton.
37. MAIDSTONE BRIDGE. *Wayne Harris*, Sheila Lamont, Tom Lamont.
38. MELFORT. Genevieve Belliveau, Harry Belliveau, Bill Bristol, Philip Curry, Glen Galloway, Freida Markland, Tom Smith, Kathy Stevenson.
39. MOOSE JAW. Alice and Carl Ellis, Doug Francis, Alta and Don Fyvie, Al Guernsey, Edith Kern, Pat Kern, Eve King, Leith and Cy Knight, Alice and Gordon Silversides, Arie and Henry Van Dorland, Gus and Mary Zado.
40. NAICAM. Julie Jensen, *Ron Jensen*.
41. NIPAWIN. Bert Dalziel, Joan Dalziel, *Bruce Donovan*.
42. NISBET FOREST. *Muriel Carlson*, Gail Paine, Vetha Paine.
43. PRINCE ALBERT. John Burt, *Pamela Burt*.
44. PRINCE ALBERT. *Kim Hruska*, Dr. and Mrs. H. A. Martinson.
45. RAYMORE. Greta Harris, *Wayne Harris*, Sheila Lamont.
46. REGINA. Chris Adam, Jessie Bailey, Margaret Belcher, Tom Beveridge, Frank Brazier, Kirsten Costain, Joanne Edwards, M. Edwards, L. Eley, Tony Lang, Bob Luterbach, Ron Mendelsohn, Gillian Minifie, Irene Pierson, Bill Puscus, Brian Rainey, Tom Riffel, Bill Russon, Diane Secoy, Allan Smith, Frank Switzer, Ian Switzer, R. Tegart, R. L. Tegart, John Triffo. *Chris Adam and Bob Kreba*.
47. ROSE VALLEY. Julie Jensen, *Ron Jensen*.
48. ST. WALBURG. Nigel Caulkett.
49. SASKATCHEWAN FORKS. Terry Toews, *Don Weidl*.
50. SASKATOON. Mark Abley, Juhachi Asai, Carol Balog, Annie Beer, Raymond Bisha, Muriel Carlson, Debra Cohen, Eric Densem, Murray Doell, Chris Escott, Barry Evenson, Hartley Fredeen, Muriel Galloway, Mary Gilliland, Bob Godwin, Bernie Gollop, Bev Haug, Del Haug, David Houston, Mary Houston, *Stuart Houston*, Louise Klaassen, Catherine Laratte, Ken Lumbis, Kathy Meeres, Stew Meeres, Betty Mundy, Jim Mundy, Laurie Murison, Tom Murison, Bert McBride, Cameron McBride, Richard McBride, Jean McQueen, Don McRobbie, Jo McRobbie, Mickey Narun, Bill Nickel, Lynn Oliphant, Jim O'Neil, Pat O'Neil, John Polson, Adam Schmidt,

Charlie Simpson, Jim Slimmon, Alan Smith, Gerald Smith, Mary Strickland, Shannon Voysey, Jim Wedgwood, Elda Windsor, Henry Windsor.

51. SCOTT. *Guy Wapple,* Robert Wapple.

52. SEMANS. Tony Lang, Sarogini Ramnarine, *Lloyd S. Saul*, Jane Yee.

53. SKULL CREEK. Eileen Bennetto, *James Bennetto*, Marj Mann, Jr., Murina Schuler.

54. SOMME. Margaret Back, Stan Back, Alice Billeter, Edwin Billeter, Shirley Billeter, David Black, Florence Chase, Ian Chase, Jim Chase, *Donald Hooper*, Eldon Hooper, David Osecki.

55. SPRING VALLEY. Allan Bogdan, *Flossie Bogdan*, Nick Bogdan.

56. SQUAW RAPIDS. *Wayne Harris*, Sheila Lamont, Wayne Renaud, Guy Wapple, Robert Wapple.

57. TISDALE. Joyce Mohr.

58. TOGO. Bert and Doris Franklin, Phil and Jean Hern, Walter Krupp, Cusie and *Wanda May*, Arch and Elizabeth Parker, Mary and Dick Smith, Howard and Donelda Wilson, Orville and Elaine Wilson.

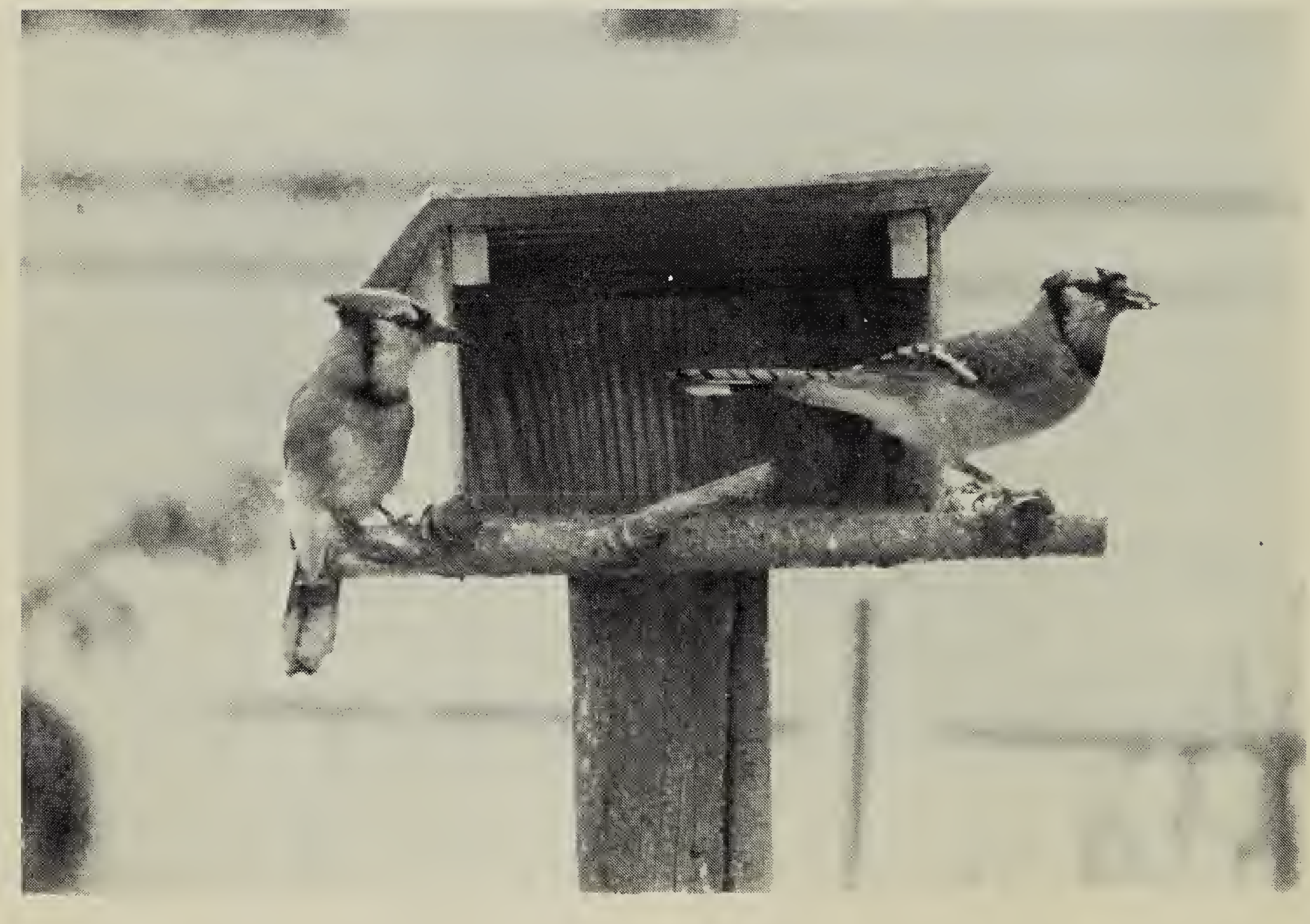
59. WASKESIU. Suzanne Henry, *Anne Landry*, Bradley and June Muir, John Pollock, Kathy Ryhorchuk, Glen and Lorraine Schmidt, Kathy Stefanuk, Pat Strutt, Jackie and Mervyn Syroteuk.

60. WEBB. Catherine Dumouchel, Jim Gibson, Stan Greenwood, Lois Nisbet, *Jack Ricou.*

61. WHITE BEAR. Sig Jordheim, Carl Maalerud.

62. WHITEBEECH. Tracy Hutchinson, Ida Wotherspoon, *Lindsay Wotherspoon.*

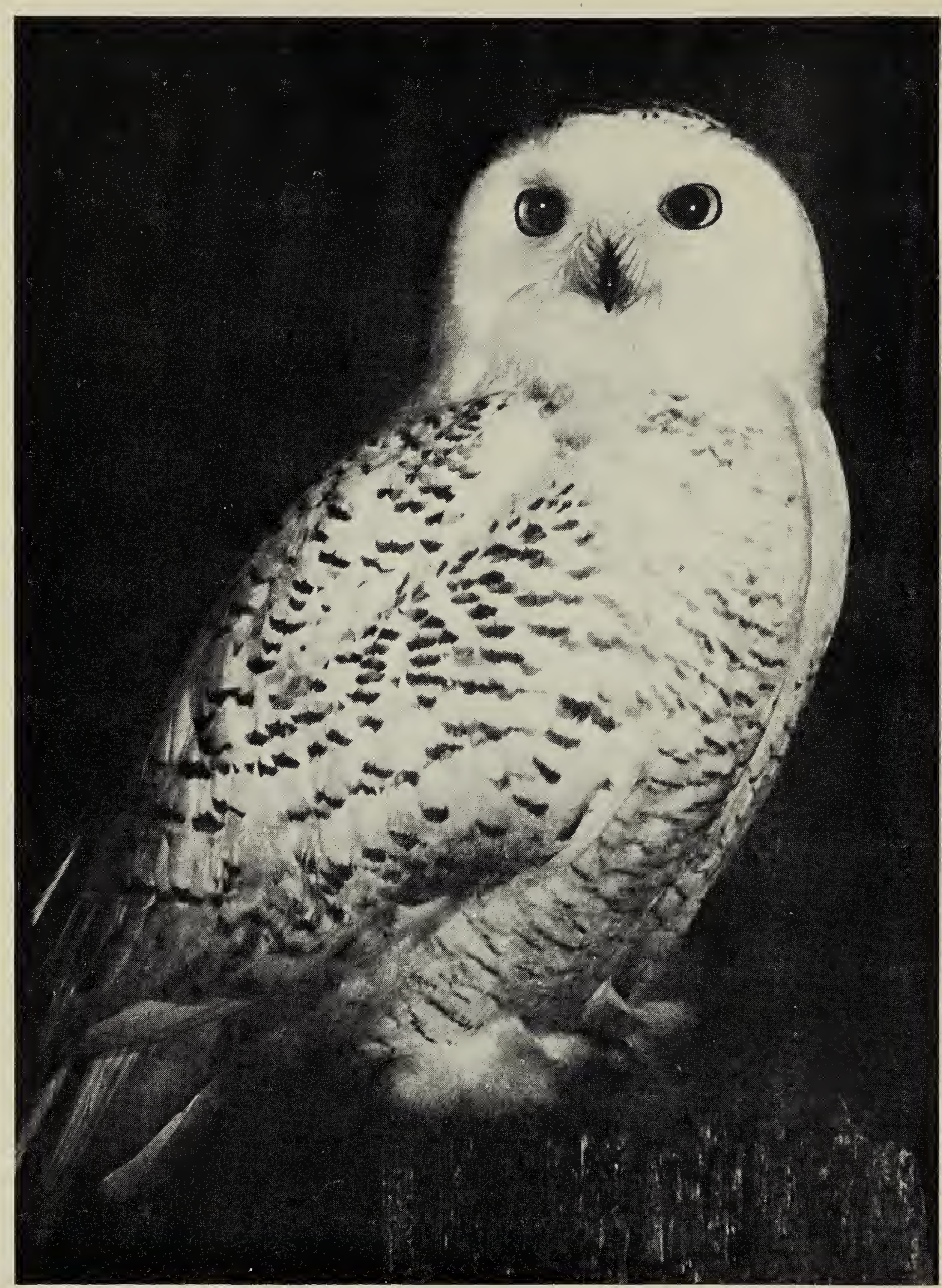
63. WOLSELEY SOUTH. *Dale Chay*, Don Hayward.



Blue Jays *J. Asai*

Table 1. CHRISTMAS COUNT COVERACE AND WEATHER CONDITIONS.

LOCALITY / COVERAGE AND CONDITIONS	KILOMETERS BY VEHICLE	KILOMETERS ON FOOT OR SKIS	HOURS BY VEHICLE	HOURS ON FOOT OR SKIS	HOURS WATCHING FEEDERS OR OWLING	TEMPERATURE RANGE (^{o}C)	WIND SPEED (KM/HR)	SNOW DEPTH (CM)	SKY
ASSINIBOIA	33.5	1	2			-6/ -4	10-15	7-10	mostly cloudy, light snow
BIGCAR	212	26	8	10.5		-13/ -7	20-30	10-20	partly cloudy, light snow
BIG CULLY CREEK	145	10	6	4	1.5	-8/ -3	0- 5	8-23	overcast,partly cloudy
BIRCH HILLS	194	3	5.5	1	1.5	-6/ -8	10-15	10-15	overcast,light snow
BRICHTWATER RESERVOIR	55	.5	3	.5		-10/-12	0- 5	10-20	overcast
BROADVIEW	210	1	5.5		3	-4/-10	light	18	cloudy, clearing, light snow
BROOKSBY	10	5	1	3		-3/ -4	0- 5	0- 5	overcast
CROOKED LAKE	80	3	4	1		-19/-16	5	15-20	mostly cloudy
DALMENY		16		5		-16	22-26	2-50	overcast, light snow
DILKE	137	7	6	2.5		-5/ -8	15- 5	2-30	cloudy, clearing, cloudy
ELBOW	80	5	4	4		-10/ -5	0-10	0- 3	overcast
ENDEAVOUR	9	2	2	3		-20/ -2	calm	20-30	cloudy, clearing
FORT QU'APPELLE	240		14		1	-5/ -2	15-30	5-10	overcast
FORT WALSH	225	100	21.5	41.5	2	-4/ +1	20-30	0-10	clear, partly cloudy
GARDINER DAM	267	23	16	10		-8/ -1	0-20	0- 5	clear, clouding over
CLAMIS-WISETON	30	5	1	2		-5/ -3	0- 5	6-15	mostly clear
COODSOIL	30	.5			6	-5/-15	0- 5	10-25	?
GOOD SPIRIT LAKE	92	13	5	3.5	1	-7	calm	12-15	overcast
GOVENLOCK	173	42	15	16		-3/ +3	2-10	0- 2	mostly clear
CRAND CENTRE	85	1	2.5	.5		-16	24-48	30	overcast, light to heavy snow
HARRIS	202	10	5	4		-6/ 0	15-20	10-30	mostly cloudy
HUMBOLDT	35	15	.5	2.5		-9/ -6	0	20	overcast, clearing
INDIAN HEAD	75	13	5.5	10		-7	10	20	overcast
KELVINCTON	25		.5		5	-10/ -7	0	20	overcast, light fog
KELVINCTON	10	2	1	.5	1.5	-10/-12	calm	20-23	overcast
KENASTON	25		7			-8	calm	?	clear
KILLSQUAW LAKE	98	1	5.5	.5		-15	0	10-20	overcast
KINDERSLEY	46	1.5				-8/ -3	light	7-15	partly cloudy
KUTAWAGAN LAKE	210	6	7	2		-16/-10	3-16	2-20	heavy snow, overcast
LA RONGE	40	11	2	3		-11/ -8	10-18	30-50	overcast
LAST MOUNTAIN LAKE	180	5	7	2		-15/ -9	2- 8	2-20	light fog, clearing
LEADER	1	5	.5	2		-10/ +2	0-30	2- 7	clear
LEASK		20		5		-11/ -7	0	20-25	overcast
LOON LAKE	20	2	.5	1	8	-15/-10	15-20	10-15	overcast, moderate snow
LOVE-TORCH RIVER	70	2	2	1	2	-5/-10	0- 5	10-20	overcast
LUSELAND	142	18	3	5	2	-8/ -2	0-35	20-30	clear, clouding over
MAIDSTONE BRIDCE	150	10	6	4	2	-15/ -5	0- 8	5-20	overcast, light snow
MELFORT	25	5	1	3		-13/ -8	?	3- 8	overcast
MOOSE JAW	107	10	5	9	1	-3/ 0	5-13	7	mostly clear
NAICAM	80	7	4	4		-12/-15	?	?	partly cloudy
NIPAWIN	100	1	4	1	2	-5/-10	0- 5	10-20	?
NISBET FOREST		15		3.5		-11/ -5	?	20-25	cloudy, fog
PRINCE ALBERT					8	-15/-20	6- 8	22-30	mostly clear
PRINCE ALBERT	50	25	1	6	1	-10/-15	light	5-10	overcast
RAYMORE	250	8	7	3	3	-8/ -6	3-25	5-15	overcast, fog
REGINA	753	66.5	26	22.5		-13/-17	43-17	5-20	overcast, light snow
ROSE VALLEY	40	2	5	5		-28	?	?	mostly clear
ST. WALBURG	100	3	6	2		-13/ -9	40-30	15-20	mostly cloudy, light snow
SASKATCHEWAN FORKS	46.5	8	1.5	3.5		-10/-11	10- 5	10-15	overcast, fog
SASKATOON	547	117.5	41.5	52.5	23	-16/-15	24	8-13	overcast
SCOTT	224	10	7	4		-7	10-20	10-30	overcast
SEMANS	99	10	3.5	4		-16/-12	5- 2	10-50	clear, clouding over
SKULL CREEK	10	3	3	3		-5/ -1	0- 7	8-10	mostly cloudy
SOMME	115	8	7	3	5	-5/ -8	20-25	25-30	partly cloudy
SPRING VALLEY	25	16	1	3.5	.5	-6/ -2	8-22	32-36	overcast, light snow
SQUAW RAPIDS	80	42	7	17		-18/-10	2-20	20-25	overcast, snow, clearing
TISDALE	5		1.5		1	-10/ -8	5-10	6- 7	mostly cloudy
TOCO					40	mild	0	5	heavy hoar frost
WASKESIU	138	38.5	6	18	3	-12/ -9	9-11	15-22	overcast, light snow
WEBB	330	4	10	3		-5/ -3	0	skiff	overcast
WHITE BEAR	18	12	.5	4	.5	-4/ 0	15- 0	15-30	clear
WHITEBEECH	30	1.5	1.5		8	-12/-14	0- 5	25	mostly clear
WOLSELEY SOUTH	100		3			-6	32	26	clear



Snowy Owl *Chris Rees*

Table 2-1. SPECIES RECORDED FROM MORE THAN THREE LOCALITIES DURING COUNT PERIOD. A PLUS SIGN INDICATES A HIGH COUNT FOR A SPECIES SEEN DURING COUNT PERIOD BUT NOT ON COUNT DAY.

SPECIES / LOCALITY	ASSINIBOIA December 29	BIGGAR December 21	BIG GULLY CREEK December 30	BIRCH HILLS December 18	BRIGHTWATER RESERVOIR January 2	BROADVIEW January 1	BROOKSBY December 27	CROOKED LAKE December 24	DALMENY December 27	DILKE January 1
MALLARD						2				
COMMON GOLDENEYE										
GOSHAWK			1							
GOLDEN EAGLE	1							1		+1
BALD EAGLE										
PRAIRIE FALCON										
MERLIN						1				1
RUFFED GROUSE							+2			
SHARP-TAILED GROUSE		52	7	9		2		55	12	5
RING-NECKED PHEASANT	8					1				
GRAY PARTRIDGE	76	37	11	8		4			48	18
ROCK DOVE		177	8	32					30	15
GREAT HORNED OWL	2	2	2	4		+1		3		3
SNOWY OWL	1	2			2				+1	1
COMMON FLICKER										
PILEATED WOODPECKER										
HAIRY WOODPECKER		1	1			5	+1			
DOWNY WOODPECKER		1	1	3		4				1
N. 3-TOED WOODPECKER										
HORNED LARK										25
GRAY JAY										
BLUE JAY		+1	1	3		4				
BLACK-BILLED MAGPIE	18	93	30	25	3	7	2	14	4	26
COMMON RAVEN			+1	5		+1	2	6		
BLACK-CAPPED CHICKADEE		32	15	12	1	19		3	1	
BOREAL CHICKADEE		2								
WHITE-BREASTED NUTHATCH						3				
RED-BREASTED NUTHATCH		1								
BROWN CREEPER										
AMERICAN ROBIN					1	12		1		
BOHEMIAN WAXWING		33		12						
CEDAR WAXWING		11		+11						
NORTHERN SHRIKE								1		
STARLING		9		4						
HOUSE SPARROW	500	1059	180	130	30	17		30	80	303
RED-WINGED BLACKBIRD										
RUSTY BLACKBIRD										2
EVENING GROSBEAK						5	12			
PINE GROSBEAK			20							
COMMON REDPOLL										
PINE SISKIN										
RED CROSSBILL		5								
WHITE-WINGED CROSSBILL			66							
DARK-EYED JUNCO										
TREE SPARROW										
SNOW BUNTING	10	111	257	485	250	+1	300	36	30	
NO. SPECIES IN TABLE 3 & 4	0	1	2	1	1	0	0	1	0	0
NO. COUNT DAY SPECIES	9	18	14	14	7	14	4	11	7	11
NO. COUNT PERIOD SPECIES	9	19	15	15	7	17	6	11	8	12
NO. COUNT DAY INDIVIDUALS	619	1629	602	733	288	86	316	151	205	400

Table 2-2. SPECIES RECORDED FROM MORE THAN THREE LOCALITIES DURING COUNT PERIOD. A PLUS SIGN INDICATES A HIGH COUNT FOR A SPECIES SEEN DURING GOUNT PERIOD BUT NOT ON COUNT DAY.

SPEGIES / LOCALITY	ELBOW December 19	ENDEAVOUR December 25	FORT Q'APPELLE December 18	FORT WALSH December 18	GARDINER DAM December 20	GLAMIS WISETON December 26	GOODSOIL December 28	GOOD SPIRIT LAKE December 19	GOVENLOCK December 19	GRAND CENTER (Sask-Alta) December 26	HARRIS December 30
MALLARD	715		67	2	1225						
COMMON GOLDENEYE	2				17		+4				
GOSHAWK			2	3	2						
GOLDEN EAGLE	1		1	3					2		1
BALD EAGLE					15						
PRAIRIE FALCON				1	1				1		
MERLIN									1		
RUFFED GROUSE		1	+1	2				+1			
SHARP-TAILED GROUSE	1	6	16	6	36			6			72
RING-NECKED PHEASANT			6	12					6		
GRAY PARTRIDGE			+2		14	+12			3		25
ROCK DOVE	10		6	8	89	6			4		536
GREAT HORNED OWL		1	+1	1	2	1		1	4		2
SNOWY OWL	1				3	5			5		6
GOMMON FLICKER											
PILEATED WOODPECKER							+1	1			
HAIRY WOODPECKER			+1	7	2		2	4			
DOWNY WOODPECKER		+1	4	2	1		2	6	1		3
N. 3-TOED WOODPECKER											
HORNED LARK				5	1				706		1
GRAY JAY							2				
BLUE JAY			7		6		8	+1		5	
BLACK-BILLED MAGPIE	22	4	32	139	71	2	6	16	10	5	116
COMMON RAVEN		14		7			10	7		15	
BLACK-CAPPED CHICKADEE		6	35	102	17		6	24		7	5
BOREAL GHICKADEE											
WHITE-BREASTED NUTHATCH			1	1				+1			
RED-BREASTED NUTHATCH				88							
BROWN CREEPER				2							
AMERICAN ROBIN			2		2						
BOHEMIAN WAXWING	5		+2	45	6		+15	48			7
CEDAR WAXWING											
NORTHERN SHRIKE			+1	5				1			
STARLING						12					25
HOUSE SPARROW	114	5	470	35	1000	200		123	423	5	1633
RED-WINGED BLACKBIRD			4								
RUSTY BLACKBIRD			1								1
EVENING GROSBEAK	1	+6	+5		2		30	+1		15	
PINE GROSBEAK							1	9			
COMMON REDPOLL			+2	18	1						
PINE SISKIN			1	7							
RED CROSSBILL				46							
WHITE-WINGED CROSSBILL											
DARK-EYED JUNCO											
TREE SPARROW				10	4						
SNOW BUNTING	2	100	172	532	2324	14	+30	1500	6183		910
NO. SPECIES IN TABLE 3 & 4	2	1	2	10	5	0	0	0	6	0	1
NO. COUNT DAY SPECIES	13	8	18	31	27	7	9	13	19	6	16
NO. COUNT PERIOD SPECIES	13	11	27	32	27	8	13	17	19	6	16
NO. COUNT DAY INDIVIDUALS	876	137	828	1192	4847	240	67	1746	7399	52	3345

Table 2-3. SPECIES RECORDED FROM MORE THAN THREE LOCALITIES DURING COUNT PERIOD. A PLUS SIGN INDICATES A HIGH COUNT FOR A SPECIES SEEN DURING COUNT PERIOD BUT NOT ON COUNT DAY.

HUMBOLDT December 26	INDIAN HEAD December 19	KELVINGTON December 18	KELVINGTON January 2	KENASTON December 26	KILLSQUAW LAKE December 23	KINDERSLEY December 26	KUTAWAGAN LAKE December 23	LA RONGE December 26	LAST MOUNTAIN LAKE December 26	LEADER December 31	LOCALITY SPECIES
	200				22						MALLARD
											COMMON GOLDENEYE
											GOSHAWK
	1								1		GOLDEN EAGLE
	1									1	BALD EAGLE
											PRAIRIE FALCON
											MERLIN
	6										RUFFED GROUSE
+1	32	5	+4	14			110		137		SHARP-TAILED GROUSE
											RING-NECKED PHEASANT
+8	17		+6	16		4	11		8		GRAY PARTRIDGE
	11		4	8	50	2	7		76		ROCK DOVE
+1	1			+2			2		7		GREAT HORNED OWL
	1			+2	1	1	+1		1		SNOWY OWL
											COMMON FLICKER
											PILEATED WOODPECKER
+1	7	2	1	+1				2			HAIRY WOODPECKER
1	6	1	1	1			1				DOWNY WOODPECKER
											N. 3-TOED WOODPECKER
+1	7			4	6		15		5		HORNED LARK
								8			GRAY JAY
	2	2						+3			BLUE JAY
+10	35	4	9	15	6	1	27		53	3	BLACK-BILLED MAGPIE
+1		1	8					46			COMMON RAVEN
5	38	3	7		3		1	2	2		BLACK-CAPPED CHICKADEE
								1			BOREAL CHICKADEE
	2										WHITE-BREASTED NUTHATCH
	2										RED-BREASTED NUTHATCH
	+1										BROWN CREEPER
	10										AMERICAN ROBIN
	20	12			250					21	BOHEMIAN WAXWING
											CEDAR WAXWING
			+1			+1		+1			NORTHERN SHRIKE
											STARLING
+100	495	4	200	150	65	50	267		1244	16	HOUSE SPARROW
											RED-WINGED BLACKBIRD
											RUSTY BLACKBIRD
								7			EVENING GROSBEAK
+5								+3			PINE GROSBEAK
								7			COMMON REDPOLL
											PINE SISKIN
											RED CROSSBILL
											WHITE-WINGED CROSSBILL
			1								DARK-EYED JUNCO
											TREE SPARROW
+50	270	50	300	18	5	100	9483		12944	3	SNOW BUNTING
0	0	0	0	0	0	0	0	0	1	0	NO. SPECIES IN TABLE 3 & 4
2	21	10	9	8	9	6	10	7	11	5	NO. COUNT DAY SPECIES
12	22	10	12	11	9	7	11	10	11	5	NO. COUNT PERIOD SPECIES
6	1164	84	531	226	408	158	9924	73	14479	44	NO. COUNT DAY INDIVIDUALS

Table 2-4. SPECIES RECORDED FROM MORE THAN THREE LOCALITIES DURING COUNT PERIOD. A PLUS SIGN INDICATES A HIGH COUNT FOR A SPECIES SEEN DURING COUNT PERIOD BUT NOT ON COUNT DAY.

SPECIES / LOCALITY	LEASK January 2	LOON LAKE December 26	LOVE-TORCH RIVER December 31	LUSELAND December 26	MAIDSTONE BRIDGE December 29	MELFORT December 19	MOOSE JAW December 26	NAICAM December 26	NIPAWIN December 31	NISBET FOREST December 29	PRINCE ALBERT December 18
MALLARD											
COMMON GOLDENEYE											
GOSHAWK				+1	1						
GOLDEN EAGLE											
BALD EAGLE											
PRAIRIE FALCON				+1			1				
MERLIN				1			1				
RUFFED GROUSE	3									1	+1
SHARP-TAILED GROUSE				1	1			11	2		
RING-NECKED PHEASANT							11				
GRAY PARTRIDGE				+8	5	+17	1	12			
ROCK DOVE		+3		37	2		79	3	23		
GREAT HORNED OWL				+1	2		1	1			
SNOWY OWL				2	+1	1					
COMMON FLICKER							2				
PILEATED WOODPECKER											
HAIRY WOODPECKER		2	+2	1	1		2	4	1		2
DOWNY WOODPECKER		+2	1		1		3	3	2		2
N. 3-TOED WOODPECKER											
HORNED LARK				3			1				
GRAY JAY		1							2	1	
BLUE JAY		2	6	2	2	+1				2	4
BLACK-BILLED MAGPIE	8	3	13	9	21	9	35	26	16	2	2
COMMON RAVEN	5	4	4		+1	+3		2	41	2	2
BLACK-CAPPED CHICKADEE	15	10	14	11	21	2	23	4	8	20	8
BOREAL CHICKADEE	2	5									
WHITE-BREASTED NUTHATCH			+1				2				+1
RED-BREASTED NUTHATCH			1								
BROWN CREEPER											
AMERICAN ROBIN							+2				
BOHEMIAN WAXWING				110		20				11	+6
CEDAR WAXWING				5			75				
NORTHERN SHRIKE											
STARLING				13			24	2			
HOUSE SPARROW		60	4	500	290	63	506	172	124		
RED-WINGED BLACKBIRD											
RUSTY BLACKBIRD											
EVENING GROSBEAK		30	22			+305		3	149	6	40
PINE GROSBEAK			+3								1
COMMON REDPOLL								1			
PINE SISKIN											
RED CROSSBILL											
WHITE-WINGED CROSSBILL			+20								
DARK-EYED JUNCO					1		+2				
TREE SPARROW		10									
SNOW BUNTING		20	17	975	182	+127	8	243	47		
NO. SPECIES IN TABLE 3 & 4	0	1	0	0	1	0	0	0	0	0	1
NO. COUNT DAY SPECIES	5	12	9	14	13	5	17	14	11	8	9
NO. COUNT PERIOD SPECIES	5	14	13	18	15	10	19	14	11	8	12
NO. COUNT DAY INDIVIDUALS	33	148	82	1670	531	95	775	487	415	45	62

Table 2-5. SPECIES RECORDED FROM MORE THAN THREE LOCALITIES DURING COUNT PERIOD. A PLUS SIGN INDICATES A HIGH COUNT FOR A SPECIES SEEN DURING COUNT PERIOD BUT NOT ON COUNT DAY.

PRINCE ALBERT December 19	RAYMORE December 21	REGINA December 27	ROSE VALLEY December 24	ST. WALBURG December 26	SASKATCHEWAN FORKS December 19	SASKATOON December 27	SCOTT December 28	SEMANS December 29	SKULL CREEK December 26	SOMME December 18	LOCALITY SPECIES
		52				10					MALLARD
						74					COMMON GOLDENEYE
+1	1					1					GOSHAWK
											GOLDEN EAGLE
											BALD EAGLE
									+1		PRAIRIE FALCON
+1		6				4					MERLIN
	1	+1		1		3			+3		RUFFED GROUSE
	13	2		11	19	59		15	8	54	SHARP-TAILED GROUSE
									11		RING-NECKED PHEASANT
	7	69				45	16	9		+8	GRAY PARTRIDGE
310	221	848	7	6		1459	89	13		42	ROCK DOVE
1	9	2		1		10	1	+1	2		GREAT HORNED OWL
	1	4				7	2	+1	+3		SNOWY OWL
		3				1			+1		COMMON FLICKER
+1				1						2	PILEATED WOODPECKER
1	1	+2			1	13	1	+1	+2	8	HAIRY WOODPECKER
1	1	2	1		2	8				7	DOWNY WOODPECKER
1		1								+3	N. 3-TOED WOODPECKER
	2	23						18	3		HORNED LARK
1				2						12	GRAY JAY
3						15				10	BLUE JAY
20	75	34	11	10	7	434	45	15	10	26	BLACK-BILLED MAGPIE
42			21	5	4					74	COMMON RAVEN
36	12	8	14	11	8	152	11	4	6	24	BLACK-CAPPED CHICKADEE
			2		10		2			11	BOREAL CHICKADEE
		2				+1				2	WHITE-BREASTED NUTHATCH
		2			1	10					RED-BREASTED NUTHATCH
		1				1					BROWN CREEPER
		13				5			1		AMERICAN ROBIN
25		+1	16			969	5		5	40	BOHEMIAN WAXWING
		36				75			10	1	CEDAR WAXWING
	1					1					NORTHERN SHRIKE
	8	11				42					STARLING
2	1468	2482	31	4		2496	438	227	78	88	HOUSE SPARROW
		2				1			+2		RED-WINGED BLACKBIRD
	1	2									RUSTY BLACKBIRD
40	+1		1							65	EVENING GROSBEAK
	3				4	1				20	PINE GROSBEAK
						87			+100		COMMON REDPOLL
											PINE SISKIN
34		7				48					RED CROSSBILL
79					24	9				6	WHITE-WINGED CROSSBILL
						1	2			1	DARK-EYED JUNCO
									2		TREE SPARROW
	33935	81	130	115		775	692	86	+4500	229	SNOW BUNTING
0	1	5	0	0	0	3	1	0	1	0	NO. SPECIES IN TABLE 3 & 4
15	18	28	10	11	10	34	13	8	11	20	NO. COUNT DAY SPECIES
18	20	31	10	11	10	35	13	11	20	22	NO. COUNT PERIOD SPECIES
596	35760	4352	234	167	80	6821	1305	387	136	722	NO. COUNT DAY INDIVIDUALS

Table 2-6. SPECIES RECORDED FROM MORE THAN THREE LOCALITIES DURING COUNT PERIOD. A PLUS SIGN INDICATES A HIGH COUNT FOR A SPECIES SEEN DURING COUNT PERIOD BUT NOT ON COUNT DAY.

SPECIES / LOCALITY	SPRING VALLEY January 1	SQUAW RAPIDS December 24	TISDALE December 25	TOGO December 26	WASKESIU December 20	WEBB December 20	WHITE BEAR January 2	WHITEBEECH January 1	WOLSELEY SOUTH December 31		NO. OF COUNTS PER SPECIES
MALLARD		1				14					11
COMMON GOLDENEYE		56									5
GOSHAWK		1									10
GOLDEN EAGLE	+1					2					12
BALD EAGLE		2				1					5
PRAIRIE FALCON						1					7
MERLIN											8
RUFFED GROUSE		1			8				+1		17
SHARP-TAILED GROUSE	+15	61		1		29	2		+2		39
RING-NECKED PHEASANT	+1										8
GRAY PARTRIDGE	32					7	37		15		34
ROCK DOVE	38					109	123		+15		38
GREAT HORNED OWL	+2	1				1	+1				36
SNOWY OWL	1			1							27
COMMON FLICKER											4
PILEATED WOODPECKER		1						+1			7
HAIRY WOODPECKER		18	3	4	9			2			37
DOWNY WOODPECKER		7		3	5			2			37
N. 3-TOED WOODPECKER		3									4
HORNED LARK	2								8		19
GRAY JAY		5			10						10
BLUE JAY		15		+1				+1			25
BLACK-BILLED MAGPIE	5	14	4	5	21	41	37	1	1		62
COMMON RAVEN		78	2	7	31			8			33
BLACK-CAPPED CHICKADEE		29	3	19	39	1		7	2		52
BOREAL CHICKADEE		6		11	45						11
WHITE-BREASTED NUTHATCH											11
RED-BREASTED NUTHATCH					1						8
BROWN CREEPER											4
AMERICAN ROBIN											10
BOHEMIAN WAXWING	+1			80		1		+25			28
CEDAR WAXWING				+6							9
NORTHERN SHRIKE						1					10
STARLING				5		3	7				13
HOUSE SPARROW	360		6	400	1	165	300	4	100		55
RED-WINGED BLACKBIRD	+1										5
RUSTY BLACKBIRD											5
EVENING GROSBEAK				97				20			23
PINE GROSBEAK		56									12
COMMON REDPOLL		5		+1							9
PINE SISKIN				+8	10						4
RED CROSSBILL											6
WHITE-WINGED CROSSBILL		36									6
DARK-EYED JUNCO				+6	3						8
TREE SPARROW											4
SNOW BUNTING	256	5242		350	5	+100	1	+7	56		54
NO. SPECIES IN TABLE 3 & 4	0	11	0	1	5	1	0	0	0		
NO. COUNT DAY SPECIES	7	28	5	13	15	15	7	7	6		
NO. COUNT PERIOD SPECIES	13	23	5	19	15	16	8	11	9		
NO. COUNT DAY INDIVIDUALS	694	5702	18	983	214	377	507	45	182		

Table 3. SPECIES SEEN IN THREE OR FEWER LOCALITIES.

SPECIES	LOCALITIES AND NUMBERS SEEN
COMMON LOON	GARDINER DAM, 1.
CANADA GOOSE	REGINA, 623.
GADWALL	GARDINER DAM, 1
COMMON MERGANSER	GARDINER DAM, 2; SASKATOON, 1; SQUAW RAPIDS, 5.
RED-BREASTED MERGANSER	GARDINER DAM, 1.
SHARP-SHINNED HAWK	CROOKED LAKE, 1.
COOPER'S HAWK	SKULL CREEK, +1.
RED-TAILED HAWK	SQUAW RAPIDS, 1.
ROUGH-LEGGED HAWK	FORT WALSH, +1; COVENLOCK, 2; RAYMORE, +1.
GYRFALCON	ELBOW, 1; SQUAW RAPIDS, 3; TOGO, +1.
PEREGRINE FALCON	WEBB, 1.
SPRUCE GROUSE	WASKESIU, 1.
SAGE GROUSE	GOVENLOCK, 7.
CHUKAR	GOVENLOCK, 1.
TURKEY	FORT WALSH, 5.
KILLDEER	GOVENLOCK, 1.
COMMON SNIPE	BRIGHTWATER RESEVOIR, 1; FORT WALSH, 1.
HAWK OWL	BIRCH HILLS, 1; LOON LAKE, 1; SQUAW RAPIDS, 1.
GREAT GRAY OWL	SQUAW RAPIDS, 2.
BOREAL OWL	SQUAW RAPIDS, 1.
BLACK-BACKED THREE TOED WOODPECKER	SCOTT, 1; SQUAW RAPIDS, 2.
COMMON CROW	REGINA, 1.
GOLDEN-CROWNED KINGLET	BIGGAR, 1; FORT WALSH, 15; WASKESIU, 2.
LOGGERHEAD SHRIKE	REGINA, 1.
BREWER'S BLACKBIRD	FORT QU'APPELLE, 1; SASKATOON, 3.
PURPLE FINCH	SASKATOON, 1.
HOARY REDPOLL	FORT WALSH, 15.
HARRIS' SPARROW	FORT WALSH, 1.
WHITE-THROATED SPARROW	HARRIS, 2; PRINCE ALBERT, 1; REGINA, 1.
SONG SPARROW	FORT QU'APPELLE, +1.
MCCOWN'S LONGSPUR	GOVENLOCK, 1.
LAPLAND LONGSPUR	GOVENLOCK, 38.

Table 4. BIRDS NOT IDENTIFIED TO SPECIES.

	LOCALITIES AND NUMBERS SEEN
SWAN species	ELBOW, 1.
BUTEO species	FORT WALSH, 1.
EAGLE species	LAST MOUNTAIN LAKE, 1.
FALCON species	GARDINER DAM, 1.
GROUSE species	BIG GULLY CREEK, 1; SQUAW RAPIDS, 1.
WOODPECKER species	FORT WALSH, 2; MAIDSTONE BRIDGE, 1; SQUAW RAPIDS, 5; WASKESIU, 1.
THREE-TOED WOODPECKER species	BIG GULLY CREEK, 1.
CHICKADEE species	SQUAW RAPIDS, 1; WASKESIU, 21.
NUTHATCH species	ENDEAVOUR, +1; WASKESIU, 1.
WAXWING species	REGINA, 33.
REDPOLL species	FORT WALSH, 52; SQUAW RAPIDS, 46.
CROSSBILL species	FORT WALSH, 11.

FORT SMITH, NORTHWEST TERRITORIES

DATE: 26 December 1982

WEATHER: Scattered overcast. Temperature −23°C. Snow depth 41 cm.

TRAVEL: 3 groups covered 150 km in 3.5 hours by car.

BIRDS SEEN: Willow Ptarmigan, 6; Gray Jay, 9; Common Raven, 54; Black-capped Chickadee, 6; Boreal Chickadee, 4; Unidentified Chickadee, 12. Five species, 91 individuals.

OBSERVERS: Kevin Antoniak, Rita Antoniak, Gail Bourke, Mr. Bowes, Don Brannington, Isabel Brannington, Len Hooper, Mrs. Mollie Hooper, Bill Jensen, Lea Jensen, Michael Jones, Harold Pankratz, Jeff Thompson (compiler).

INFORMATION WANTED ON GREAT GRAY OWLS IN SASKATCHEWAN

As recently as 25 years ago the Great Gray Owl was considered to be very rare and possibly endangered in North America. Recent work by Bob Nero in southeastern Manitoba has proven the Great Gray Owl to be quite common some years in that region. Observations in Saskatchewan over the past ten years indicate that Great Gray Owls are not uncommon in some areas of this province.

I would appreciate receiving information on any unpublished observation of Great Gray Owls in Saskatchewan. Please include date, location and habitat in which the observations were made. — *Wayne Harris*, Box 414, Raymore, Saskatchewan. S0A 3J0

PRAIRIE NEST RECORDS SCHEME

Persons in Alberta, Manitoba, Saskatchewan, and the Northwest Territories interested in recording the progress of nesting birds are required to assist the Prairie Nest Record Card Scheme.

Information is entered on the blank nest record cards. The cards are returned to the Prairie Nest Record Scheme when the nesting season is finished. Graduate students, government biologists and other researchers make use of the cards when seeking nesting data on bird species they are studying.

Recording cards, instructions, and a copy of the 1982 nesting season report can be obtained by writing H. W. R. Copland, Prairie Nest Record Card Scheme, Manitoba Museum of Man and Nature, 190 Rupert Avenue, Winnipeg, Manitoba. R3B 0N2

American Redstart on nest

C.J. Smith

OSPREY NESTING SUCCESS IN WEST-CENTRAL SASKATCHEWAN

FRANK SCOTT, Box 90, Loon Lake, Saskatchewan, S0M 1L0 and C. STUART HOUSTON, 863 University Drive, Saskatoon, Saskatchewan. S7N 0J8

The concentration of Ospreys near Loon Lake has been followed continually since 1975. The study area extends 43 km west, 14.5 km north and 22.5 km south of the village of Loon Lake, but only the forest trees near lakes and ponds are searched intensively. One of us (FS) has flown over all known nest sites in early May to see which were occupied. A second visit identified active nests containing eggs. In early July all active nests were visited to see which had been successful and to determine which of the trees were climbable.

Over the 8 years the number of known nests has increased. In part this represents better coverage of the area, although there may have been a real increase in the number of nests in 1982. We know of some nests that are new, but others at a considerable distance from water may have been previously overlooked. The distribution of active nests has varied from year to year. Those nests used for only one year are most often unsuccessful. Other nests have been consistently successful.

Harry Graham

Osprey at nest, Loon Lake area

All banding has been done in mid- to late July, when the young were large enough. However, we may have been too late at least once in each of 1975 and 1981, when one young had fledged before we climbed the tree. Whilst it is difficult to count young from the air, in each the number banded was less than the number seen in the nest a day or two earlier. Also, in 1979, two young from a nest close to a gravel highway were found sitting on the side of the road whereas the previous day both had been in the nest. Only once, on 21 July 1979, was a late nest encountered where young were too small to hold bands without the use of waterproof adhesive tape to hold the band in place for a few days until the leg grew to fit the band.

Nest visits were made using a Piper PA 18 150 equipped with floats, flying to within 20 m above and to one side of a nest at 80 to 100 km/hour. This allowed a good view to both pilot and observer. Eggs were easy to see and count. Young were more difficult to see since they lay flat and bunched up, blending well with the lining material of the nest. Sometimes young were countable, but at other times we could only say that young were present, maybe 1 or 2 or 3. Over the years our assessment of nests has improved. Unproductive nests climbed have been mainly deserted nests containing addled eggs in mid-July; such eggs are given to the Canadian Wildlife Service for pesticide level determinations.

The easiest nests, with branches, 22 occasions in all, were climbed by one of us (CSH; all but one of these trees was alive). The other 26 successful climbs, involving more difficult trees, were made by Bruce Donovan (8), Kim Hruska (5), Richard L. Ehman (4), Jim Bardwell, David L. Surkan, Ken Simes and Kelly Wylie. Donovan was hit in the face by a fish carried by a diving parent Osprey and Kim Hruska had his scalp raked open by Osprey claws, requiring sutures, antibiotics and a tetanus booster shot. We have since worn safety helmets for Ospreys as well as owls. The decision as to whether a particular tree is safe to climb rests with the climber. Two dead trees deemed unclimbable in earlier years were climbed safely in 1981 and 1982.

Having looked at the decrepit state of 2 dead nest trees in 1977, both in imminent danger of falling over, and knowing of the success of nest platforms in Michigan and Ontario, we decided to erect artificial nesting platforms in March 1978, aided by Bruce and Betty Donovan. By then it was warm enough to work outdoors although the lakes were still frozen, making ski-doo access easy. The sites chosen were: 1. Near a nest which had fallen down that winter but which had been consistently successful; 2 and 3 were regularly productive nests in dead trees — one a low Jackpine which we easily pushed over by hand, the other a tall spruce, the top half of which was rotten and decayed. Neither tree had much chance of standing another season.

Each nest platform was a 4 ft. by 4 ft. sheet of 1-inch thick plywood with a row of 1/2 inch dowels set in from the edge to hold the nest material.[10] The top of a suitable tree was lopped off and the platform was cantilevered out from one side using 6-ft. long 2" by 6" lumber fastened to the tree with lagg bolts; the platform was just below the truncated top. No. 1 was too far from the old nest for the nest material to be placed on the platform. It has not been used. No. 2 was in a low 20-ft. Jackpine very close to the old nest in the tree we pushed over. We transferred nest material to the platform which was a similar height with an unrestricted view of the lake. That year 3 young Ospreys were reared on it. While interest has been shown in succeeding years, no eggs have been laid since. No. 3 was made by placing the 2" by 6" lumber as a bridge between the live lower half of the nest tree

Osprey platform building crew at Loon Lake, left to right: Betty Donovan, Bruce Donovan, Frank Scott, Mary Houston.

and an adjacent Spruce. The platform served as a bridge between the tops of the two stumps. To it we added nest material from the previous nest that was about 8 ft. deep. This platform has not attracted any Osprey attention.

From our observations in this area, Ospreys are unable to build a nest in time for use the same year. Therefore dead trees are a potential hazard. When an occupied tree falls it will mean loss of production that season, as well as the following season while a new nest is being built -- if there is no alternate nest nearby. In 1982 a dead tree with an active nest toppled during a storm about 2 weeks prior to the banding expedition. By extreme good fortune the tree fell against the only nearby living tree and lodged there. The 3 young were banded by climbing the live tree. After the breeding season the nest tree fell completely. There is another nest close by in a dead but climbable tree.

An active unclimbable nest which fell during the '77-'78 winter had a pair on territory nearby in 1978 and by 1979 the new nest within 25 yards was successful. At another site no fewer than 4 Ospreys were seen building a single nest in 1978. Interest was shown in the nest in 1979 and 1980 but not in 1981. This nest finally contained eggs in 1982 but was unsuccessful.

Each year there are a few pairs of Ospreys present that do not lay eggs. In 1982 there were three such pairs in attendance at previous nests, while four pairs built new nests but failed to lay eggs. We do not know their age but speculate that some of these Ospreys may be only 2 years old.

Discussion:

Osprey nest density near Loon Lake is higher than for any other known area in Saskatchewan, or indeed in Canada between the Great Lakes and the Rocky Mountains — an average of just over 20 active nests per 620 sq. mi. or 1 per 80 km^2.[6] [2] This compares with 1 nest per 1680 km^2 in northwestern Ontario.[2]

Nesting success and productivity in this population were high from 1975 through 1982 (Table 1). Of 158 active nest attempts 65% produced young, with an average of 2.06 young banded in 48 successful and climbable nests. This compares with 48% to 60% nest success in a successful population in Oregon.[4] The brood size of 2.06 compares favourably with a brood size of 1.35 to 1.69 found in Minnesota between 1963 and 1968, and a figure of 1.48 in Sweden.[1,8]

If we assume equal production for the 55 Loon Lake area nests not climbed, we would have another 113 young, or a total of 212 young produced near Loon Lake in 8 years, or 1.34 young per occupied nest. This compares with figures of 0.93 to 1.37 for the Oregon population.[4]

In nearly half (48%) of our successful climbable nests we banded 2 young, with a similar (46%) contribution to total production. Only 14 nests had 3 young yet these nests contributed 42% of the total production.

Osprey nesting success is an important indicator of the contamination of our environment. Along the eastern seaboard, particularly in Connecticut and Rhode Island, coincident with high levels of biocides in the environment, Osprey productivity fell to only .23 young per occupied nest in 1963-67 and the population fell to 10% of its former numbers. A slow recovery since has paralleled the reduction in use of DDT.[3]

Henny and Van Velzen have shown that Ospreys from the eastern United States winter in the West Indies and South America, chiefly in Brazil, extending far up the Amazon, and in Venezuela and Colombia.[5] A smaller

Table 1. OSPREY NESTING SUCCESS NEAR LOON LAKE

Banding Visit	*No. Active nests*	*No. Failed nests*	*No. Successful nests not climbed*	*No. Successful nests climbed*	*Nests with 1 yg.*	*Nests with 2 yg.*	*Nests with 3 yg.*	*Total young banded*
26 July '75	15	3	9	3	2	0	1	5
17-18 July '76	20	8[a]	7	5	3	1	1	8
23-24 July '77	20	5	7	8	0	5	3	19
22-23 July '78	20	8	6	6	2	3	1	11
21-22 July '79	20	8[b]	7	5	1	3	1	10
26-27 July '80	20	11	4	5	1	3	1	10
18-19 July '81	21	5	7	9	2	3	4	20
10 July '82	22	7[c]	8	7	0	5	2	16
TOTALS	158	55	55	48	11	23	14	99

[a] One nest climbed after 2 weeks of cold, wet weather in 1976 contained 3 dead young.

[b] One nest contained only 1 addled egg.

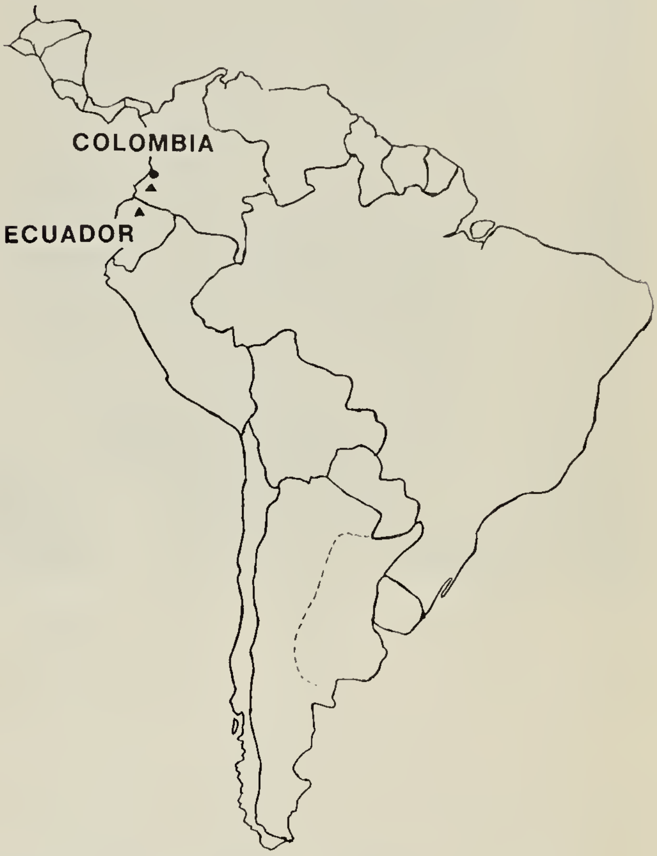
[c] Two nests each contained only 2 addled eggs.

Other addled eggs in successful nests: 2 eggs with 2 young twice in 1977, 1 egg with 1 young in 1978, 1 egg with 2 young in 1978, 1 egg with 2 young in 1981. Total in 8 years, 12 addled eggs in nest at banding visit. Also, there was 1 dead young in a nest with 2 live young in 1978; total in 8 years, 4 young ospreys dead in nest.

number winter on the western side of the continent, in Ecuador and Peru. They remain in South America as 1-year-olds but a number of 2-year-olds return as non-breeding birds to the approximate area of their birth, and thereby form an estimated 6% of the population on the breeding grounds, where they may build nests but do not lay eggs.[5]

Although the sample is small, it seems probable that most of the Loon Lake Ospreys winter along the northwestern coast of South America, and the adjacent inland rivers. Three of the 4 recoveries to date are in a straight line, from inland on the equator in Ecuador, north to the coast 3 degrees north of the equator in Colombia, a distance of 375 km (Table 2 and Figure 1). All were within 1 year of banding; the one in early June is consistent with other evidence that year-old birds remain on the wintering grounds without returning north.

Results from Ospreys raised in Idaho and eastern Washington have resulted in 14 recoveries from 254 nestlings banded. Other than Idaho (2) and Texas (1), there have been 5 recoveries from Mexico and 6 from Central America, but none from South America.[7] It may be that, as with several other species, the most northern individuals "leap-frog" over the more southern nesters to winter farther south.



● *recovery within six months of banding*

▲ *recovery more than six months after banding*

Figure 1. *Osprey Band recoveries* in South America.*

Table 2. RECOVERIES OF OSPREYS BANDED NEAR LOON LAKE

Band Number	*Banding and Recovery Locations*[1]
608-31261	Peck Lake (53° 50'N, 109° 30'W), 23 July 1977. Shot 13 m N of Timbiqui, Colombia (2° 50'N, 77° 40'W) in October 1977.
608-10957	Loon Lake West (54° 00'N, 109° 10'W), 27 July 1980. Shot at Atahualpa, Ecuador (00° N, 109° 20'W) on 25 February 1981.
608-12628	Loon Lake West (54° 00'N, 109° 10'W), 18 July 1981. Shot at Barbacoas, Narino, Colombia (1° 40'N, 78° 00'W) in early June 1982.
608-12631	Branch Lake, (54° 00'N, 109° 30'W), 19 July 1981. Found dead at Lake Colorado City, Texas (32° 20'N, 100° 50'W) on 15 October 1981.

[1] Two others have been found dead near the foot of their nest tree, the following month, and 2 years after banding.

C.S. Houston at Osprey nest platform, Loon Lake — *Frank Scott*

Artificial nest platforms have had great success in Michigan, and in Postupalsky's main study area most pairs nest on such platforms, reducing nestling mortality from 28% to 7% by eliminating blowdowns of nest trees.[9]

Platforms are most useful where Ospreys nest in snags in flooded reservoirs, where good nesting sites are scarce.[9] Nevertheless, Ospreys sometimes nest on telephone poles between Banff and Lake Louise, even though suitable natural trees are abundant. There is a potential advantage for Osprey nesting success in cutting down those dead trees which are in danger of falling during the next few nesting seasons and in each case offering a substitute platform nearby. Advantages to the bander in terms of safety and accessibility provide additional motivation.

Acknowledgements

We wish to thank Dr. Penelope Davis and Mary I. Houston for their continuous assistance, our courageous tree climbers who made this study so successful, and J. Bernard Gollop, who provided helpful criticism.

[1] DUNSTAN, T. C. 1968. Breeding success of Osprey in Minnesota from 1963 to 1968. Loon 40:109-112.

[2] GRAY, P. A. 1980. Bald eagles, herons and ospreys in West Patricia. Ontario Fish and Wildlife Review 19:3-6.

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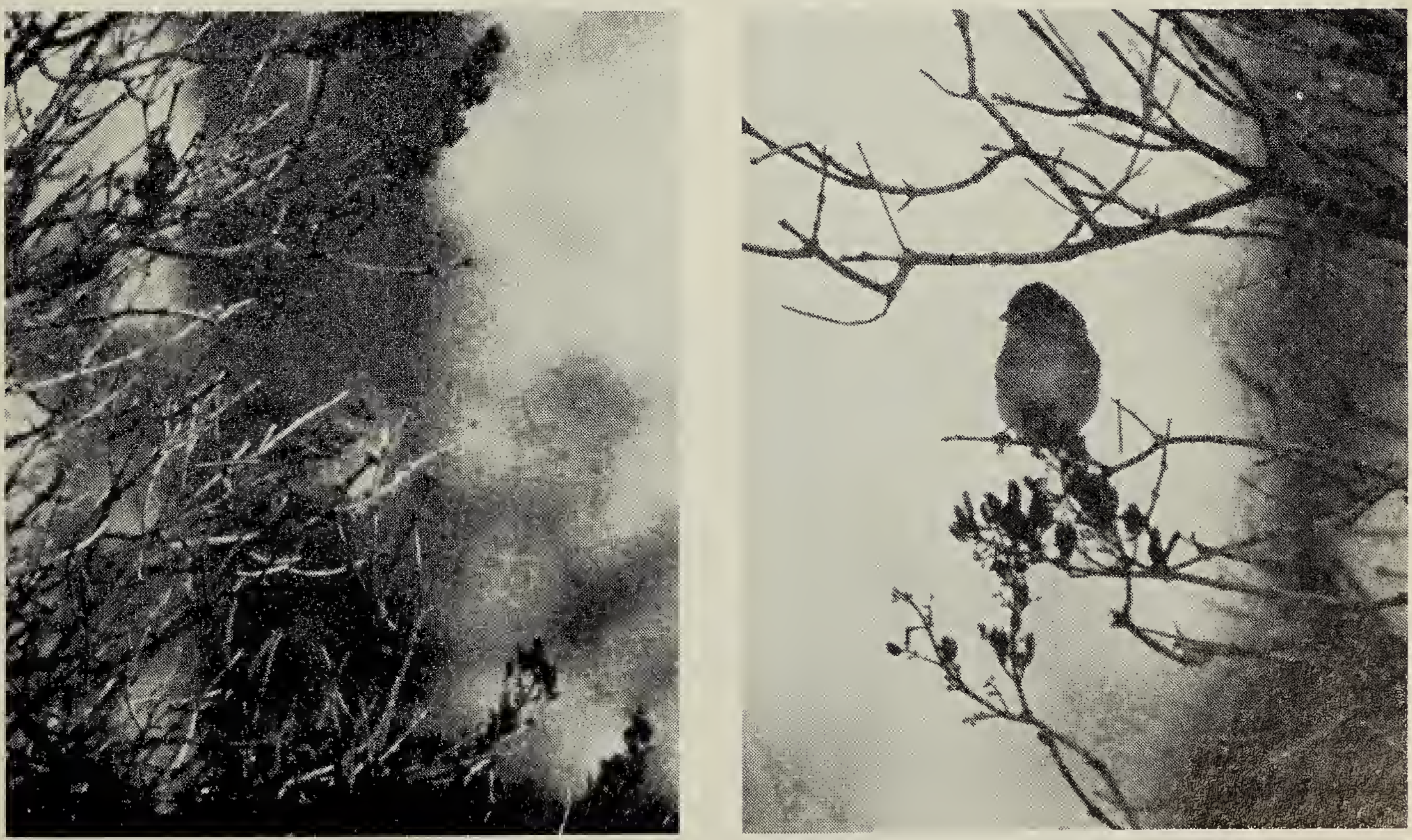
FIELD SPARROW IN SASKATCHEWAN

PAULE HJERTAAS, 919 Cook Crescent, Regina, Saskatchewan. S4X 2L9

On 17 December 1982 Dale Hjertaas and I were fortunate enough to locate a Field Sparrow near Meyronne, Saskatchewan. We left Regina in the morning to participate in the Fort Walsh Christmas Bird Count. We stopped at Meyronne, on Highway 13, southwest of Gravelbourg because Dale wanted to check the community pasture for Sage Grouse (he had seen them there in the past). Not seeing much sagebrush from the road, we decided to take the first turn west and proceed around the pasture to check the other sides. After a couple of miles, we reached a promising abandoned farmyard and decided to check it for Gray Partridges.

Dale was walking the outside perimeter and I was checking the inside hedgerows when a small bird hopped on a twig on the east side of the bushes in full sight. I could see a sparrow with a prominent white eye-ring and a very pink bill, legs and feet. My mind raced . . . it could only be a Field Sparrow. "Dale, hurry, hurry, hurry! I see a Field Sparrow!" Well, I guess he could not hear well, being behind both me and the thick perimeter of trees; he came in only at half-speed, but with his toque half-falling off . . . "I must have heard wrong" he said, "Did you say a Field Sparrow?" When he saw the bird, it wasn't anything he had seen before. He, also, first noticed the eye-ring and the color of the bill. Definitely a sparrow and one he did not know! "Keep an eye on it while I go get the field guide", he said.

The sparrow remained until Dale was over 50% convinced that it was a Field Sparrow and returned to the car to get the field notebook in which we recorded



Chris Adam John Triffo

Field Sparrow near Meyronne, Saskatchewan the following descrption:

> "white eye-ring, pink bill, legs and feet, 2 buffy wing-bars, a buffy breast with no streaks or stick-pin, a striped back with quite a bit of brown in it, like a House Sparrow, a face pattern identical to the one illustrated in Peterson and Robbins for the Field Sparrow. The only difference with the illustrations is a pale rusty cap with a gray streak in the middle. The only way to see this last character is if the bird is looking you in the eyes . . . with both eyes . . ."

Peterson and Robbins do not give much detail on the plumage.[3] [5] Robbins et al state "Told by its pink bill and legs, unstreaked crown, and lack of a dark eye line" and Peterson "note the pink bill of this rusty capped sparrow . . . a narrow eye-ring sometimes gives it a big-eyed expression."[5] [3]

In Robbins, the juvenile is represented as having a streaked breast and a full pale rusty cap, characters that are both different from what we observed, and Peterson does not illustrate the juvenile at all.[5] [3] We were not absolutely discouraged though, as our experience with this genus of sparrow is that the young often have a streaked crown (e.g. Chipping and Swamp Sparrows).

We observed the bird for a half hour noting behavior. The call note in Peterson is described as "tsee," with a querulous quality but, to Dale and me, that sounds much like a lot of other sparrows.[3] After I called a couple of times, our bird started giving a "tseep" call, more or less every 5 seconds, as it was moving through the bushes. Once in a while, it seemed to get excited and the call became a short "tsip," every second or so. It seemed to prefer the lilac clump as cover and returned there from other hedgerows and after foraging on the ground. In four foraging observations, it stayed on the ground between 10 and 60 seconds, then hurried deep into the lilac hedge. After 10 to 15 seconds, it would show up again at the edge of the branches.

Following the Fort Walsh and Govenloch CBC's, Bob Kreba, Chris Adam, Bill Russon and John Triffo (all from Regina) stopped at the farmyard on 19 December 1982, and found the bird in exactly the same clump of lilacs! They noticed all the characters I described previously, plus the pale rusty darker crescent around the shoulder. The light around 04:00 p.m. was still good enough for photography, and thus documentation of the Field Sparrow was obtained.

Only two of the reference books consulted gave data on the gray band across the crown. Bent, describes the eastern subspecies, *Spizella pusilla pusilla* with ". . . crown and nape rusty brown with a more or less evident median gray stripe . . ." and Ridgway the western subspecies, *S.p. arenacea* with ". . . the pileum always (?) with a broad median stripe of gray, sometimes wholly gray, or with only a faint tinge of brown indicating the usual lateral stripes . . ."[2] [4] These references removed our lingering doubts about the crown stripe and indicated that the bird we saw was possibly of the western subspecies.

Perhaps the most surprising aspect of this observation is its timing. Field Sparrows breed as far north as southern Montana, North Dakota, Minnesota and southern Ontario and Quebec.[2] [4] [6] Skaar considers the Field Sparrow as "probably breeding" within 70 miles of the International Border (49° latitude) immediately south of Meyronne.[6] A breeding season bird would be only a 100-mile range extension, but the winter range is farther south. The closest observations to Saskatchewan in the 1972, '74, '78 and '80 Christmas Bird Counts published in American Birds were in southern Minnesota and Wisconsin, all south of 45° N. latitude except one at a feeder in Ashland, Wisconsin, around 46° 10'N. The species is also present each year in some southern Ontario Counts. A breeding Field Sparrow could be expected in the south of Saskatchewan but this winter record is a considerable extension beyond the normal range.

I would like to thank Bob Kreba for providing a number of references and Dale Hjertaas for his decision to go on the Fort Walsh CBC, stopping at Meyronne on the way, thus enabling this discovery. Thanks also to Dale for reviewing this article.

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[3] PETERSON, R. T. 1969. A Field Guide to Western Birds. Second ed. Revised and enlarged. Houghton Mifflin Company. Boston, Mass. 366 pages.

[4] RIDGWAY, R. 1901. The Birds of North and Middle America, part 1. Bulletin of the United States National Museum No. 50. Government printing office, Washington.

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Abandoned farmstead, location of Field Sparrow near Meyronne *Chris Adam*

YOUNG GREAT HORNED OWL CALLS

WAYNE C. HARRIS, Box 414, Raymore, Saskatchewan. S0A 3J0

In the September 1982 *Blue Jay* the calls of young Great Horned Owls were the subject of an article entitled "The Great Gray Owls that weren't".[1] At the end of the article the authors asked whether others had heard calls which could be mistaken for those of young Great Gray Owls.

The "plaintive call" to which they referred is one with which I am quite familiar. I first heard the call as a teenager on a fall evening at our farm south of Raymore. I asked my father what they were and he replied that they were made by young Great Horned Owls.

These calls, which I refer to as "screeek" calls, have been heard regularly since then, both on our farm and at several localities around Saskatchewan; I had given them little thought until I read the aforementioned article, which prompted me to share my observations.

The earliest I have heard these calls is mid-July, the latest, late December. They are most frequently heard in August and September, tapering off in October and infrequently in November. Until December 1982 I can not remember hearing the calls past late November, however a bird which frequented our yard this year gave the calls on several occasions at dusk up to 15 December. Then near sunset on 30 December while bird-watching along the North Saskatchewan River north of Maidstone a Great Horned Owl was watched while giving this call.

I have always interpreted this as a hunger call of young Great Horned Owls begging food from adults who are trying to wean them from free hand-outs. This would seem to be verified from the antics of two young owls in our yard during 1981. The birds were raised in a nest about one-half mile from our house and began frequenting our yard in late July. They were seen nightly in early August often accompanied by an adult. The young birds never hooted but gave the "screeek" call; conversely the adults only hooted. The appearance of the adults diminished and possibly ceased around 10 August though the young remained. We began losing chickens on the 15th and on the night of 17 August I saw a young Great Horned Owl clutching a still struggling chicken in our chicken house. Using a flashlight I succeeded in catching the bird. The only entrance was a 10-inch square hole at ground level, customarily left open as the chickens were in an enclosed pen. The previous night the young owl must have landed on the ground, walked into the house, captured a chicken and dragged it out through the same hole. Rather than kill the young owl, I transported it to the Last Mountain Lake Wildlife Management Unit and released it, hoping it would not seek more domestic chickens and meet a somewhat less happy ending!

The chicken losses stopped for a couple of weeks as the poultry entrance was now closed at night. The other young owl remained a nightly visitor, and proved to be an intelligent individual. It entered the chicken house window by pushing aside the loose wire mesh, and escaped by the same route when the door was opened the next morning. The second night it pushed open the now nailed down mesh and killed two chickens, barely eating any of the flesh. This time it was captured in a five-gallon pail and transported for release in an area remote from inhabited farm yards near Big Quill Lake.

This year (1982) all wire mesh windows were securely fastened and doors were closed at dusk; no chickens were lost to owls in spite of there being a young "screeeking" owl in our yard all fall.

Another experience with this call occurred in the Cypress Hills of southwestern Saskatchewan during the last weekend in September 1980. A "screeeking" owl was heard about one-half mile from our campsite on Battle Creek. Imitations of adult Great Horned Owl calls brought the young bird to within 25 yards and it was clearly seen with the aid of a flashlight to be a Great Horned Owl.

Thus it would appear that both young Great Horned and Great Gray Owls give this food begging call.[1] [2] [3] I do not know whether young Barred Owls may also give this call. At dusk on 28 November 1981 between Squaw Rapids and Cumberland House, Saskatchewan a "screeeking" owl was heard but did not respond to Great Horned Owl imitations. The next night at about 1800 h less than 100 yards from where the "screeeking" was heard the previous night, a Barred Owl flushed from a road-killed Snowshoe Hare in the path of our headlight beams.

I would like to thank Stuart Houston for his helpful comments on this article.

[1] HOUSTON, C. S., C. J. ESCOTT and R. C. GODWIN. 1982. The Great Gray Owls that weren't. Blue Jay 409(3):164-165.

[2] NERO, R. W. 1980. Great Gray Owl — Phantom of the northern forest. Smithsonian Institute Press, Washington, D.C.

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Great Horned Owl with prey

Fred W. Lahrman

GREAT GRAY OWL ATTACKS CAGED PHEASANTS

ROBERT W. NERO, Manitoba Wildlife Branch, Box 14, 1495 St. James Street, Winnipeg, Manitoba. R3H 0W9

On 17 April 1982, I received a local phone call from Robert A. Clark who lives near the shore of Longbow Lake, 12 miles east of Kenora, Ontario. Bob is a conductor for Canadian Pacific Railways and an enthusiastic naturalist who keeps a few exotic birds (pheasants, turkeys, peafowl) in pens on his lakeshore property. He told me about an incident that I think is worth recording.

On the evening of 25 March 1982, Bob was at the edge of Longbow Lake when he heard a strange noise coming from the direction of his bird pens. This was about 1800 h and it was still fairly light. He hastened up the hill to his pens, about 200 feet away, and was surprised to find a large dark gray owl perched on a stump near a pen that contained three Golden Pheasants. He looked closely at the owl, expecting to see the ear tufts of a Great Horned Owl but to his surprise the bird completely lacked ear tufts. It then dawned on him that it must be a Great Gray Owl. Meanwhile, the owl moved to a fence post about 15 feet away from him, glaring steadily at him with bright yellow eyes. Bob noted that the owl had a big, round head. Later, he examined his own mounted specimens of a Great Horned Owl and a Great Gray Owl (mounting and possession of protected raptors found dead is permitted in Ontario) as well as photos in his copy of *Great Gray Owl — Phantom of the Northern Forest* and concluded that the bird was a Great Gray Owl.[1]

It flew away shortly after he had studied it, but by a curious coincidence it was seen a minute or so later flying over a bay of the lake by Ontario Ministry of Natural Resources employee Bill Mills. Mills told Clark two days later about seeing a Great Gray Owl (and a single Canada Goose) fly by him at evening on the day of Clark's observation. Thus, it seems well established that Bob Clark's owl was a Great Gray Owl.

Examination of the pen revealed the presence of numerous wing and talon marks in the snow along the side of the pheasant pen which was covered on that side with one-inch chicken wire. One of the three Golden Pheasants was dead, evidently having killed itself trying to escape. A second bird had managed to smash out of the pen, but was later recaptured. The third one was free of harm.

Clark guessed that the strange noise he had heard from the lakeshore for several minutes was the sound of the owl buffeting and whacking the wire screen on the side of the pen with its wings and body, trying to get at the helpless pheasants. He also guessed that the owl had been repeatedly launching itself from its perch on the nearby stump, apparently oblivious to the wire. Clark guessed that if the pen had been covered with two-inch chicken wire the owl might have broken his way into the pen.

He admitted that there was no cover in the pen for the pheasants to hide behind (he has since added spruce boughs for cover). It is nice to know that he bears no animosity towards the owl and even assumed that it might return. After discussing the affair with friends, it was guessed that it must have been a hungry owl. Someone mentioned the heavy crust of snow, more than one inch and sufficient to support a man at that time, and the likelihood that the owl had been unable to find its usual prey of small mammals. Clark felt strongly that the owl was driven by hunger to try to attack the pheasants.

Great Gray Owls have only rarely been known to tackle such large prey, though a Golden Pheasant is close to the body size of a Ruffed Grouse. In my experience Great Gray Owls have once only killed Ruffed Grouse, Spruce Grouse, and Sharp-tailed Grouse. The book *The Birds of Minnesota* makes note of the fact that a Great Gray Owl entered a henhouse one December and killed two fowl.[2]

Clearly, the Great Gray Owl is capable of fierce action when hungry and one needs to keep an open mind about their capacity for occasionally attacking fowl, although mainly preying on small mammals.

[1] NERO, R. W. 1980. Great Gray Owl — Phantom of the northern forest. Smithsonian Institute Press, Washington, D.C.

[2] ROBERTS, T. S. 1932. The Birds of Minnesota. University of Minnesota Press, Minneapolis.

TWENTY-SECOND ANNUAL NESTBOX REPORT FROM BRANDON, MANITOBA

MRS. JOHN LANE, 1701 Lorne Avenue, Brandon, Manitoba, R7A 0W2 and MAMIE McCOWAN, BARBARA ROBINSON, HAZEL PATMORE and ANN SMITH.

In 1982 the nestbox project was carried out for its twenty-second year by the volunteer group "The Friends of the Bluebirds". These volunteers held spring and fall meetings and monitored boxes during the spring-to-fall period. Their field notes were submitted to the project co-ordinator, Mrs. John Lane. Data from these notes have been used in the preparation of this report.

A summary of nestbox occupants in 1982, is given in Table 1. Other creatures occupying boxes included mice, squirrels, and an Eastern Kingbird.

We noted a substantial increase in nestings of Eastern Bluebirds from 43 nestings in 1981 to 72 this year.

One cross breeding was reported by Earle Farley of Dougas, an Eastern ♀ x Mountain♂.

Earle also reported a magnificent flock of Mountain Bluebirds in fall migration. We quote from his observations: "On September 15, I was sowing fall rye in our pasture field. As I came to a corner I could see a large flock of Mountain Bluebirds, approximately 100 in number. They were feeding in the short grass and some on the fence — a wonderful sight. The next day when I drove up to the tractor and drill, I could see the bluebirds sitting on the tractor and drill and in the small trees nearby. They all moved to the trees as I came close. They stayed in the area most of that day."

A pair of Eastern Kingbirds nested in one of Earle Farley's boxes and three eggs were laid but they did not hatch. The entrance hole was large, the work of a squirrel that previously had occupied the box.

Table 1. OCCUPANCY OF NEST BOXES IN 1982.

Occupant	*Number of nestings*
Mountain Bluebird	662
Eastern Bluebird	72
Bluebird (not identified to species)	7
Cross Nesting Bluebirds (Eastern x Mountain)	1
Tree Swallow	661
House Sparrow	119
House Wren	62

House Sparrows *R.J. Long*

On the average, not as many eggs were laid in a clutch by Mountain Bluebirds as in other years. Possibly the late cold spring was a factor.

In order to keep mice from over-wintering in nest boxes, some members, when cleaning the boxes this fall, used a strip of plywood or screen netting to cover the holes.

Dr. Richard Rounds, Brandon University, reports that in 1982 a follow-up of the 1981 project, "Experimenting with micro-climate of artificial nest boxes", (See Blue Jay, 40(1):46-47) was carried out by Ewing Rae, a geography student at Brandon University. Twelve nest boxes were put out, four each of black, white and natural, near Souris, Manitoba. Nine complete nest cycles were monitored. Temperature and humidity were measured inside and outside boxes. Results are being analysed by computer.

Our main contributor of nest boxes, Mr. Raymond Gladden, built 261 boxes this year. Some of these have 1-9/16" entrance holes for experimentation. From time to time other "Friends" donated boxes — John Plum, Brandon; Mr. Howard Kneeshaw, Carberry; Mr. G. Stemmer, Minnedosa, and John Clark, Treesbank.

A master map of nestlines has been prepared by Ann Smith. This will be a continuing project.

Upon request, Norah Lane gave 11 bluebird slide presentations in southwestern Manitoba and one in Tantallon, Saskatchewan. These talks were hosted by Horticultural Societies, Scouts, Beekeepers and Hospital Aid Groups. Also there were two displays — one at the Westman Science Fair and the other at our City Hall Homecoming for Centennial program, which involved many of our "Friends of the Bluebirds".

Hazel Patmore and Norah Lane attended the 5th Annual Meeting of the North American Bluebird Society (NABS), November 5, 6 and 7, at Southern Pines, North Carolina. On field trips, new types of nest boxes were seen, and small flocks of Eastern Bluebirds were a delight. In the Longleaf Pine woods they were fortunate to see the rare Red-cockaded Woodpecker and the uncommon and local Bachman's Sparrow. Other new sightings for them were the Red-bellied Woodpecker and Brown-headed Nuthatch. An award in the name of John and Norah Lane established by NABS was presented to four awardees by Norah Lane.

An enlarged coordinating committee was formed and new leaders secured for the Brandon Junior Birders. Members of the coordinating committee are Norah Lane (coordinator), Barbara Robinson, Hazel Patmore, Mamie McCowan, Ann Smith, David Barnes and Cliff Findlay. Bob and Jean Horton are the Junior Birders' leaders.

New members of The Friends of the Bluebirds include the following: *Alexander* — Mr. and Mrs. John Thiessen; *Baldur* — Jim and Irene Cramer; *Bethany* — Gerald Fischer; *Brandon* — David Barnes, Morley Brotherston, Raymond Gladden, Helen and Kris Larson, Kae Longrigg, Nancy McLennan, Garnet and Martha Northcut, Frank and Arleen Vegso, Eleanor Wilde; *Carberry* — Howard and Elsie Kneeshaw; *Dauphin* — Mr. W. J. Walley; *Kemnay* — Verda Topham; *Killarney* — Dr. David and Ruth Stewart; *Lyleton* — John Murray; *Minnedosa* — Mr. and Mrs. G. Stemmer; *Neepawa* — Barry Strohman, Cal Whelpton; *Rapid City* — Edie Evans; *Rounthwaite* — Graham Eagleton; *Treesbank* — John Clark; *Virden* — Patrick Cox. Junior groups added were Minnedosa Junior Gardeners and Rapid City Summer Recreation Group.

PRINCE ALBERT BLUEBIRD TRAIL REPORT — 1982

KIM HRUSKA, 841 - 22nd St. East, Prince Albert, Saskatchewan S6V 1N9 and
KEVIN ASCHIM, 1175 - 22nd St. East, Prince Albert, Saskatchewan. S6V 1P2

This is a summary of results obtained from the Prince Albert Bluebird Trail during the 1982 season. The houses were monitored from 26 June through 24 July.

Early in 1982 we decided to reorganize our trail so that more of it would pass through grassland and pasture. Because of this our trail now is divided into two parts, one extending out to Red Deer Hill and St. Louis and the other to Round Lake and Holbein. This change certainly increased our Mountain Bluebird nesting results, with a total of 14 nests, as well as decreased numbers of House Sparrows.

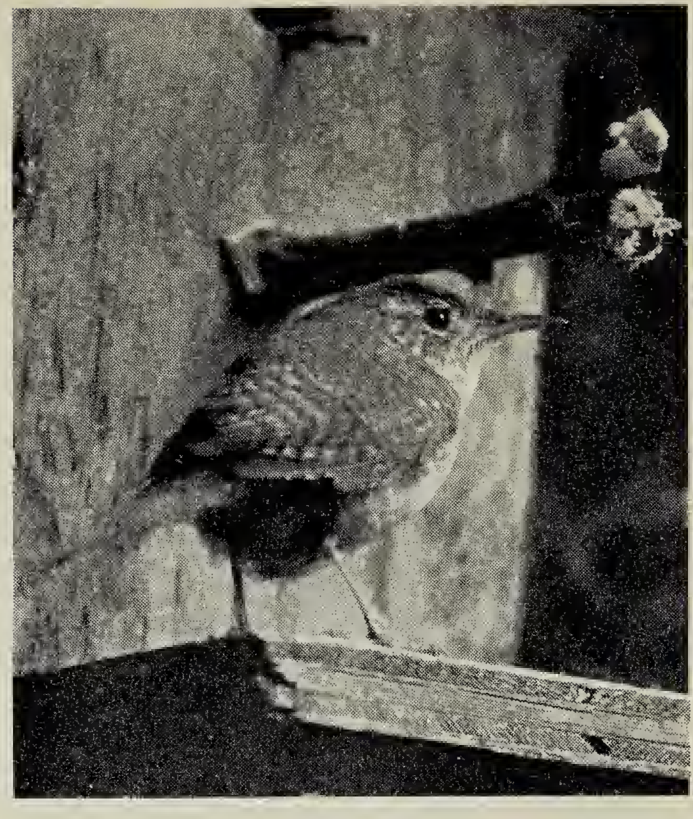
Prince Albert and district was fortunate this spring to have avoided most of the snow which much of southern Saskatchewan received at the end of May. Although the cold weather was probably responsible for the loss of one set of bluebird eggs which were laid early, and a delay in the Tree Swallow nestings by approximately one week, the rest of the results appeared normal.

The average Tree Swallow clutch size fell from a 1981 level of 5.7 to 5.3, perhaps due to the late start.

Of the House Wrens which nested in our boxes, all were found in boxes which were put up in the beginning of May and in an area of scrub poplar forest, both of which may account for the wren's presence there and nowhere else on the trail.

Other inhabitants included a white-footed mouse as well as a dead garter snake. It is possible that the garter snake may have been in search of eggs or young birds.

In a total of 118 bird boxes there were 135 attempted nestings. The occupancy rate of useable boxes was 97.4%.



House Wren *Doug Gilroy*

Table 1. PRINCE ALBERT BLUEBIRD TRAIL RESULTS IN 1982.

Species	*No. Nests*	*No. Eggs*	*Young Fledged*	*Addled Eggs*	*Mortality*	*Clutch Size*	*Ave. No. Fledged*
Tree Swallow	94	497	465	32	6.4%	5.32	4.98
House Sparrow	9	36*	—	—	—	—	—
Mountain Bluebird	14	67	58	9	15.5%	4.79	4.14
House Wren	5	11	10	1	—	2.2	2.0
Empty	13						

*All eggs destroyed

Female Marsh Hawk *Gary W. Seib*

MARSH HAWKS FEEDING ON SNOWSHOE HARES

ROBERT W. NERO, Manitoba Wildlife Branch, Box 14, 1495 St. James Street,
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On 17 April 1982 Herbert W. R. Copland and I observed two male Marsh Hawks, about a mile apart, each feeding on the fresh carcass of a Snowshoe Hare. This was at midday on a forestry road in boreal forest habitat about 45 miles southeast of Winnipeg. Both hares appeared to be freshly killed and were lying on the cleared right-of-way. Because of the light traffic on this particular road and the location of the hares it seemed unlikely that they were roadkills, hence we believed them to be fresh prey. (Admittedly it would have been wise to skin the hares to ascertain that they had been killed by the birds.) Both birds were feeding on the entrails or internal organs. The hares were still in partly white pelage and would have been conspicuous in the snow-free landscape.

In each case the birds flushed from the roadside at the close approach of our car and then, while we were stopped, flew in close circles about us, rising up over adjacent trees and dropping low over the road. As soon as we drove some 50 feet away, each bird returned to its prey.

Spencer G. Sealy reports nesting Marsh Hawks in southeastern Alberta feeding on adult Nuttall's Cottontails.[5] The latter species, as determined by Sealy from adult museum specimens, have an average weight of 984 grams. Snowshoe Hares are larger, averaging 1,500 grams, according to A. W. Frank Banfield (The Mammals of Canada. Natl. Museums of Canada. Univ. Toronto Press, Toronto. 1974). William R. Hecht found remains of young Snowshoe Hares at two Marsh Hawks nests at Delta, Manitoba.[4]

Ivan R. Tomkins states that in the saltwater marshes of South Carolina and Georgia the Marsh Hawk's winter food is mostly Marsh Rabbits.[2] According to William J. Hamilton, Jr. these rabbits average 1,600 grams.[3] On the basis of weight, it appears therefore that Marsh Rabbits are even larger than Snowshoe Hares.

Clearly, the Marsh Hawk is capable of taking large mammalian prey, the Snowshoe Hare being vulnerable to this species. Because the Snowshoe Hare is largely a woodland animal it may be less available than other prey. On the other hand hares regularly move out to feed on rights-of-way where they would be open to predation by the stealthy flight of hunting Marsh Hawks. This would be true especially in the case of adult birds, possibly experienced in taking rabbits.

I would like to thank Keith L. Bildstein and Spencer G. Sealy for directing my attention to pertinent literature. Fran Hamerstrom noted that we had failed to determine whether the Marsh Hawks had actually killed the hares.

[1] BANFIELD, A. W. F. 1974. The mammals of Canada. Nat. Mus. of Canada, University of Toronto Press, Toronto.

[2] BENT, A. C. 1961 Reprint. Life histories of North American birds of prey. Part 1. Dover Publ., New York.

[3] HAMILTON, W. J., Jr. 1963. Mammals of eastern United States. Hafner Publ. Co. Inc., New York.

[4] HECHT, W. R. 1951. Nesting of the Marsh Hawk at Delta, Manitoba. Wilson Bull. 63:167-177.

[5] SEALY, S. G. 1965. Marsh Hawk preys on cottontails. Blue Jay 23(1):25.

SASKATCHEWAN CHRISTMAS MAMMAL COUNT — 1982

Compiled by WAYNE C. HARRIS, Box 414, Raymore, Saskatchewan. S0A 3J0

A total of 49 counts were received this year reporting 28 species during the count period. The number of counts exceeds the previous high of 45 in 1980 while the number of species equals the previous high reported in 1978 and 1980. General light snow cover combined with very mild temperatures throughout the count period are undoubtedly the reason for the increase in counts.

Two new species were reported this year. A Flying Squirrel was seen at Waskesiu in Prince Albert National Park and at Good Spirit Lake, Bill and Joyce Anaka found fresh Northern Pocket Gopher diggings.

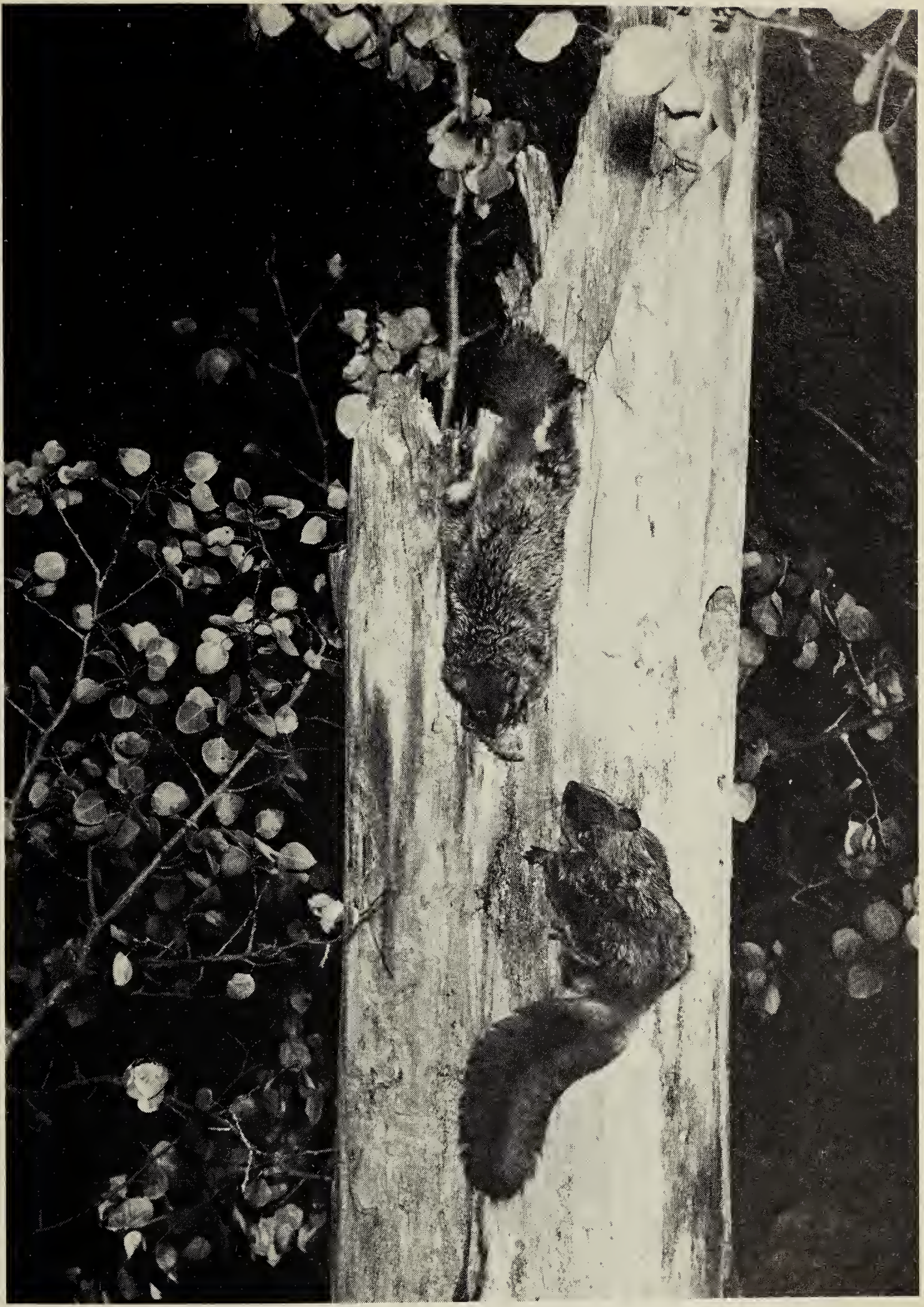
Rabbit populations appear to be down with both frequency and overall numbers less than last year for White-tailed Jack Rabbit and especially Snowshoe Hare. Coyote populations are up as are White-tailed Deer. Mild weather is undoubtedly responsible for the increased activity of such species as Striped Skunk and Badger. A new mammal detection device was initiated this year by Alan Smith when he used an extra sensory perceptive nose to locate a Striped Skunk on the Elbow count!

The only species which was expected but not reported was the Lynx. With Snowshoe Hare numbers declining in the forest the Lynx usually becomes more mobile and is recorded in the southern portions of the province — maybe next year.

For weather, coverage and participants on these counts please refer to the Christmas Bird Counts found elsewhere in this issue. Symbols found in the table are as follows:

*	Identified by tracks with estimated number of individuals in parentheses.
+	Seen during count period but not on count day.
L	Active lodges seen with number in parentheses.
H	Species heard but not seen with number in parentheses.
S	Presence indicated by smell with number in parentheses.
D	Fresh diggings located.

Skunk in snow *A. Schmidt*



Northern Flying Squirrels

Hans Dommasch

Table 1-1. SASKATCHEWAN CHRISTMAS MAMMAL COUNT.

SPECIES / LOCALITY	ASSINIBOIA December 29	BIGGAR December 21	BIG GULLY CREEK December 30	BIRCH HILLS December 18	BROADVIEW January 1	CROOKED LAKE December 24	ELBOW December 19	ENDEAVOUR December 26	FORT QU'APPELLE December 18	FORT WALSH December 18
SHREW species										
RACOON	3									
RED FOX			*			2		*(1)	*	
COYOTE			3	*(1)	*(9)	*(1)	H(2)	*(5)		3
TIMBER WOLF										
ERMINE						*(2)				
LEAST WEASEL					*(1)			*		
LONG-TAILED WEASEL					*(9)					
WEASEL species			*						*	*(3)
MINK			*		*(4)	*(1)		*(4)	+	1
RIVER OTTER										
STRIPED SKUNK							S(1)			1
BADGER										1
WHITE-TAILED JACK RABBIT	10	*(2)	3		*(4)	*(7)		2		4
SNOWSHOE HARE	3	*(1)	1	*(7)	*(20)	4	1	2	*	1
NUTTALL'S COTTONTAIL										
RED SQUIRREL			7	5	5	5		5	3	60
NORTHERN FLYING SQUIRREL										
NORTHERN POCKET GOPHER										
BEAVER										
MEADOW VOLE										8
VOLE species										
DEER MOUSE										
MOUSE species			*		*(12)	*(4)	9			3
MUSKRAT							1		2	
PORCUPINE			1			*(1)				
ELK										4
MULE DEER			4							6
WHITE-TAILED DEER	2	*(5)	*	*(1)	*(20)	*(8)		*(5)	*	23
DEER species										
MOOSE								*(2)		*
PRONGHORN										
TOTAL SPECIES	4	3	11	4	9	10	5	9	7	13

Table 1-2. SASKATCHEWAN CHRISTMAS MAMMAL COUNT.

GARDINER DAM December 20	GOOD SPIRIT LAKE December 19	GOVENLOCK December 19	HARRIS December 30	HUMBOLDT December 26	INDIAN HEAD December 19	KELVINGTON December 18	KELVINGTON January 2	KENASTON December 26	KINDERSLEY December 26	LOCALITY SPECIES
	*(1)									SHREW species
										RACOON
		2		*(3)	*(1)	*(1)	*(1)	*		RED FOX
2	*(2)	2		*(2)	9	*(1)		2	+	COYOTE
										TIMBER WOLF
										ERMINE
										LEAST WEASEL
				*(1)	2	*(1)				LONG-TAILED WEASEL
	*(1)	1								WEASEL species
	*(1)				3					MINK
										RIVER OTTER
										STRIPED SKUNK
		1						*(1)		BADGER
1	1	27	1	*(6)	2		+	+	2	WHITE-TAILED JACK RABBIT
4	*(10)			*(8)	13			*(4)		SNOWSHOE HARE
1		1								NUTTALL'S COTTONTAIL
1	*(5)			*(1)	8		1			RED SQUIRREL
										NORTHERN FLYING SQUIRREL
	D(1)									NORTHERN POCKET GOPHER
	L(1)									BEAVER
3										MEADOW VOLE
		1								VOLE species
										DEER MOUSE
	*(4)	1	*(4)			*(3)				MOUSE species
		1								MUSKRAT
*(1)	*(4)			*(1)						PORCUPINE
										ELK
16		49								MULE DEER
16	*(20)		5	*(6)	29	*(3)		*(2)		WHITE-TAILED DEER
		2								DEER species
										MOOSE
									2	PRONGHORN
9	12	9	3	8	8	5	3	6	3	TOTAL SPECIES

Table 1-3. SASKATCHEWAN CHRISTMAS MAMMAL COUNT.

SPECIES / LOCALITY	KUTAWAGAN LAKE December 23	LA RONGE December 26	LAST MOUNTAIN LAKE December 26	LEADER December 31	LOVE-TORCH RIVER December 31	LUSELAND December 26	MAIDSTONE BRIDGE December 29	MELFORT December 19	MOOSE JAW December 26	NAICAM December 26
SHREW species						*				
RACOON										
RED FOX	*					1				*
COYOTE	*		*	*(1)		3	1		5	1
TIMBER WOLF										
ERMINE						*				
LEAST WEASEL								1	1	
LONG-TAILED WEASEL						*	*(1)		4	*
WEASEL species	*	*(1)	*(3)							
MINK			*(1)						2	
RIVER OTTER										
STRIPED SKUNK										
BADGER	*									
WHITE-TAILED JACK RABBIT	7		18	1		2	*		44	
SNOWSHOE HARE		*(4)	*			*	*	1	6	*
NUTTALL'S COTTONTAIL										
RED SQUIRREL		2			2			2		1
NORTHERN FLYING SQUIRREL										
NORTHERN POCKET GOPHER										
BEAVER										
MEADOW VOLE						*				
VOLE species										
DEER MOUSE										
MOUSE species		*(3)				*	*		7	*
MUSKRAT										
PORCUPINE	2					*	1			
ELK										
MULE DEER				3		*				
WHITE-TAILED DEER	*		*	8	6	*	2		8	*
DEER species										
MOOSE										
PRONGHORN										
TOTAL SPECIES	7	4	6	4	2	11	7	3	8	7

Table 1-4. SASKATCHEWAN CHRISTMAS MAMMAL COUNT.

NIPAWIN December 31	NISBET FOREST December 29	RAYMORE December 21	REGINA December 27	ROSE VALLEY December 24	ST. WALBURG December 26	SASKATCHEWAN FORKS December 19	SASKATOON December 27	SCOTT December 28	SEMANS December 29	LOCALITY SPECIES
		*								SHREW species
										RACOON
		*		*			2		*(2)	RED FOX
	*(2)	*	*(1)	*	5	2	2		*(1)	COYOTE
										TIMBER WOLF
		1								ERMINE
										LEAST WEASEL
									*(4)	LONG-TAILED WEASEL
	*(3)	*(7)	*(1)				*(10)		*(2)	WEASEL species
										MINK
										RIVER OTTER
		*(1)								STRIPED SKUNK
										BADGER
		7	25				3	*(3)	*(21)	WHITE-TAILED JACK RABBIT
	*(20)	*		*	11	*(9)	2	1		SNOWSHOE HARE
										NUTTALL'S COTTONTAIL
1	8	H(1)		1			1			RED SQUIRREL
										NORTHERN FLYING SQUIRREL
										NORTHERN POCKET GOPHER
										BEAVER
			1							MEADOW VOLE
										VOLE species
			1							DEER MOUSE
	*(1)	*	*(1)	*	5	*(2)			*(6)	MOUSE species
										MUSKRAT
		*(2)							*(1)	PORCUPINE
										ELK
										MULE DEER
	3	8	*(1)		9	*(2)	10	*(5)	*(4)	WHITE-TAILED DEER
										DEER species
										MOOSE
										PRONGHORN
1	6	11	6	5	4	4	7	3	7	TOTAL SPECIES

Table 1-5.   SASKATCHEWAN CHRISTMAS MAMMAL COUNT.

SPECIES / LOCALITY	SKULL CREEK December 26	SPRING VALLEY January 1	SQUAW RAPIDS December 24	TISDALE December 25	WASKESIU December 20	WEBB December 20	WHITE BEAR January 2	WHITEBEECH January 1	WOLSELEY SOUTH December 31	TOTAL NUMBER OF COUNTS PER SPECIES OR GROUP
SHREW species		+	*							5
RACOON										1
RED FOX	*(1)	2	*(1)		6					21
COYOTE	*	1	1	4			*(6)	*(1)		36
TIMBER WOLF			*		*(2)					2
ERMINE										3
LEAST WEASEL							*(1)			5
LONG-TAILED WEASEL	2	*(1)					*(1)			12
WEASEL species	1		*(1)		*			*(1)		17
MINK	*(4)	+	*(2)		*(2)					14
RIVER OTTER			*(2)		*(2)					2
STRIPED SKUNK	*(1)									4
BADGER		+								5
WHITE-TAILED JACK RABBIT	6	2	*	10		*(21)	1	+	1	35
SNOWSHOE HARE			*(2)		*			*(3)		32
NUTTALL'S COTTONTAIL	2					1	*(6)			5
RED SQUIRREL			13		2			*(2)		24
NORTHERN FLYING SQUIRREL					1					1
NORTHERN POCKET GOPHER										1
BEAVER			L(1)			*(1)				3
MEADOW VOLE	*					+				5
VOLE species										1
DEER MOUSE										1
MOUSE species		*			*					23
MUSKRAT			1							4
PORCUPINE	*(2)		*(1)			*(1)	*(1)			14
ELK			*		6			*(1)		4
MULE DEER	*	3				26	22			10
WHITE-TAILED DEER	7	2	9		1	6		*(20)	*(5)	39
DEER species										1
MOOSE			*(2)		*					4
PRONGHORN						+				2
TOTAL SPECIES	11	10	16	2	12	8	7	7	2	

Mew Gull at Kluane Lake, Yukon Territory *G.L. Holroyd*

THE STATUS OF SASKATCHEWAN WILDLIFE — ASSISTANCE REQUIRED

As part of my work for the Saskatchewan Wildlife Branch I am attempting to assign each of our bird, mammal, reptile and amphibian species to one of the following population status categories:

Secure
Any species whose population levels are compatible with existing habitat and are currently secure in Saskatchewan because essential habitats are not severely threatened by environmental degredation.

Rare
Any species that, because of its biological characteristics or because it occurs at the fringe of its range or for some other reason, exists in low numbers or in very restricted areas in Saskatchewan, but is not a threatened species.

Threatened
Any species that is likely to become endangered in Saskatchewan if the factors affecting its vulnerability do not become reversed.

Endangered
Any species whose existence in Saskatchewan is threatened with immediate extinction through all or a significant portion of its range owing to the actions of man.

Extirpated
Any species no longer existing in the wild in Saskatchewan, but existing elsewhere.

Peripheral
Any species that is at the extreme edge of its geographic range and is not well established in Saskatchewan.

Accidental
Any species which has been recorded in Saskatchewan but is far from its normal range and is not expected to be present in the province on a regular basis. This status is normally only expected of highly mobile species such as birds and bats.

Undetermined

Any species about which present information is insufficient to accurately determine its status in Saskatchewan.

Only the Saskatchewan population is considered when determining a species status. Thus a species in danger of being extirpated from Saskatchewan is considered endangered, even if healthy populations are present in other parts of Canada.

The status of migratory species is based on the breeding season unless the species only occurs in Saskatchewan as a migrant or wintering bird. Species such as Brown Creeper and Golden-crowned Kinglet would be classed as secure according to their fall and winter populations, but I have not been able to determine the status for these species during the breeding season.

I have used data from the Blue Jay, SNHS Special Publications, and other literature to determine the population status of most of our species, but require assistance determining the status of the following species: Hooded Merganser, Virginia Rail, Short-billed Dowitcher, Buff-breasted Sandpiper, Thayer's Gull, Mew Gull, Poor Will, Red-headed Woodpecker, Yellow-bellied Flycatcher, Willow Flycatcher, Brown Creeper, Winter Wren, Gray-cheeked Thrush, Golden-crowned Kinglet, Solitary Vireo, Philadelphia Vireo, Black-and-White Warbler, Magnolia Warbler, Black-throated Green Warbler, Yellow-breasted Chat, Grasshopper Sparrow, Brewer's Sparrow, Pigmy Shrew, Keen's Bat, Northern Grasshopper Mouse, Chestnut-cheeked Vole, Meadow Jumping Mouse, and Great Plains Toad (*Bufo cognatus*). I would ask anyone who is familiar with any of these species and has an opinion on their population status to contact *Dale Hjertaas*, Wildlife Branch, S.T.R.R., 3211 Albert Street, Regina, Saskatchewan S4S 5W6 or telephone 565-5869.

Sunset, Qu'Appelle Valley *Chris Adam*

JUNIOR NATURALISTS

CYPRESS HILLS BIRDS

This month, I received a letter about a bird count by a young contributor:

On 17 December 1982 I, my brother Guy and Wayne Renaud left our home in Biggar for Maple Creek to do the Fort Walsh/Cypress Hills Christmas Bird Count the next day. On the trip down we saw a Rough-legged Hawk at Tompkins, a Prairie Falcon at Maple Creek, a Merlin at Elrose and 10 Snowy Owls, all of them between Biggar and Swift Current.

When we got to Maple Creek we went straight to Cypress Hills, (30 miles south of Maple Creek) to see if there were any birds around. We went to three ranches and saw a Rough-legged Hawk, two Golden Eagles, 30 Ring-necked Pheasants, four Hairy Woodpeckers and Wayne saw ten Tree Sparrows and a Harris' Sparrow; then we spent the night in Maple Creek. The next morning we all got up early and 13 of us set out for Cypress Hills at 07:30 a.m.; it was really windy but it wasn't cold. We went through the morning and didn't find any Common Snipe as our group usually does but we did see one Golden Eagle, one Prairie Falcon, ten Ring-necked Pheasants, one Northern Shrike, one Great-Horned Owl, one Common

Cypress Hills near Fort Walsh

Chris Adam

Raven, five Common Redpolls, ten Tree Sparrows, one Harris' Sparrow, and one Hairy Woodpecker and we also saw about 20 White-tailed Deer and an old Heron Colony. At noon, all the groups met at the Fort Walsh visitors' center to exchange information and eat lunch.

In the afternoon we went back to the ranches and saw two Downy Woodpeckers, a few Black-capped Chickadees, six Rock Doves which are rare for the area and two Mallards on Battle Creek. And my brother almost got sprayed by a skunk in a bale stack.

At about 05:00 p.m. we all met at the trailer dropoff near Fort Walsh and the total number of species was tallied to be 31, not including one Buteo species and two Woodpecker species. Some birds the other groups saw were six Common Ravens, one Common Snipe, one White-breasted Nuthatch, one Ruffed Grouse, three Pine Siskins, lots of Red Crossbills and about 80 Red-breasted Nuthatches. — *Robert Wapple*, Grade 9, Box 1153, Biggar, Saskatchewan. S0K 0N0

YOTTA

Do you have trouble identifying waterfowl, other birds, mammals? Here is a game that can help. It also is lots of fun!

Six on the black die and three on the white . . . Let's find the right square . . .

Maybe I should start at the beginning. We have one stack of cards about mammals (more than the number of squares) and each square is covered with a mammal photo card. Six black and three white is a Black Bear. If we play this game at beginner's level, I just take the card and read the names (common and scientific) and the information about the animal (written on the back of the card) to the other players. The first one to get 7 cards wins!

		WHITE DIE					
		1	2	3	4	5	6
BLACK DIE	1						
	2						
	3						
	4						
	5						
	6						

Yotta Board

The game can be played at other levels too: intermediate, when one has to name the animal correctly to get the card, and expert, when one needs to name the animal and add some information about it before being allowed to collect the card. Of course, the one who throws the dice is the one who has a chance at the card, and a double gives you a second turn.

The game also comes with 2 other sets of cards: one on birds and one more specifically on waterfowl. Of course, there would need to be too many cards to cover all the North American species in each group so each series covers only a good sample, a lot is relevant to Saskatchewan. Out of the 88 bird cards, 58 represent Saskatchewan species, out of 54 waterfowl cards, 37 are applicable to Saskatchewan, and 33 out of 63 mammal cards.

The information is encyclopedia style but most of it is adequate, although it could certainly be more interesting. The makers of the game sometimes forget that Canada exists by only giving the United States distribution on some of the species also present in Canada. If one plays the expert level as it should be played, one cannot get a card if all the information in the back is not given exactly. I think that this could be changed to accommodate extra information or substitute more interesting data. I understand that there should be more card series available in the future such as stars and the solar system.

I have not heard that this game is distributed in Canada yet, but the American address is — *YOTTA, INC., 417 Denny Way, Seattle, Washington, U.S.A. 98109.*

The price of the board with one box of cards is $7.00 U.S.; extra cards are $3.50 U.S. per box. I think one would also have to pay some import taxes on it.

Great Horned Owl *K. Morck*

WHO . . . WHO . . . KNOWS . . . ANSWERS

Tamara referred to Great-Horned Owls who, because of their large size and nesting close to humans are the most noticed owls in the southern prairies.

Do owls build their own nests? Tamara mentions how dilapidated the nest is. If the birds had built it themselves, would they let it fall in such disrepair? Most owls just use old crow and hawk nests.

Are the owls useful? Tamara mentions the corn getting eaten by other birds if the owls are not present. It is true that a lot of birds have developed a "freeze-up" reaction when the shape of a winged predator gets in their field of vision. I suppose that if it happens too often, they may just try to find a more suitable area to live or feed in. The Great Horned Owl's diet consists mainly of small mammals such as hares, rats, pocket gophers, and waterfowl such as the American Coot and ducks.

The two species of owls nesting in the Prairie habitat are the Burrowing Owl and the Short-eared Owl. Maybe you could try to find out more about them. The other three species nesting in bluffs, farmyards, coulees are the Saw-Whet Owl, the Screech Owl and the Long-eared Owl.

Have a good spring and don't forget to drop me a line about what you are doing in natural history at school, at home or wherever! Or maybe you have questions that you would like answered. That's what I am here for! — *Paule B. Hjertaas*, 919 Cook Cres., Regina, Saskatchewan. S4X 2L9

NATURE LIBRARY

THE COUNTRY JOURNAL BOOK OF BIRDING AND BIRD ATTRACTION

ALAN PISTORIUS. 1981. 274 pp., 7¼ x 10¼, illustrated with drawings by Don Almquist. W. W. Norton & Co., New York. Canadian $20.95.

Let me say at the outset that this is an enjoyable book. Dr. Pistorius, we learn from the dustjacket, once taught field ornithology so he knows quite a bit about birds. He goes often to the technical literature for information but he shares it with us through an easily understood discussion. He gives special thanks to Norton editor Stephen Sears who insisted that the text be readily understandable by those who, like himself, seldom bird beyond the patio. Remember that he lives in Vermont in the northeast corner of his subject region which he describes as the "extended Northeast" that stretches westward to include Regina, Saskatchewan.

An active birder, the author chronicles for us a birdwatcher's year so he has chapters at home and chapters away, although his first chapter in which he discusses the marvel of migration of birds fits neither. His discourse on migration is up to date and so comprehensive that the 30 pages on the subject justifies the purchase of the book for that chapter alone. If you still cherish the "four flyways" concept abandon it now. He gives us a vibrant account of the recently discovered route over the Atlantic Ocean which he terms the "Sargasso Sea Loop". It boggles the mind to realize that a Blackpoll Warbler, fuelled with one-third of an ounce of fat, will launch itself from a point on the New England coast, head southeasterly on a 2000-mile trip over the empty Atlantic and make landfall 80 hours later in South America — if all goes well. The study of migration is wide-ranging and complex, so much so that Dr. Pistorius devotes a special paragraph in the chapter entitled "Bibliographical Note" on the literature of migration as it does not lend itself to his plan of inserting literature references as needed throughout the book. If a reader is used to relying on bibliographies in reference books for source material this lack of a formal bibliography may be disconcerting.

His chapters dealing with birding activities around the home cover winter feeding, feeders, a lengthy 62 pages on plantings around the yard to establish and improve bird habitat, building bird boxes, and supplying water for drinking and bathing, and nectar sources for hummingbirds. These chapters are very well written, with much common sense and considerable wit, and even though he may strike down some of your cherished beliefs, he does so in a most constructive way.

His "away" chapters will appeal to every birder who has braved the hinterland to census birds. The Christmas Bird Count chapter ranges from a straightforward account of its history and scientific value to hilarious tales of some counts he has experienced. When he had the job of compiler for a local C.B.C. his procedure for recruiting observers must be given verbatim:

"You accomplish this by explaining to

> people that CBCs provide valuable scientific data, but that this is really only a byproduct of the event. The real object, you explain, is to have *fun*, which is obtained by getting up before a December or January dawn and beating the bushes in all weathers until dark, writing down the names and numbers of such birds as you may encounter. What *proves* this is fun is that, when it's all over, you pay for the privilege of having done it. Potential recruits may be skeptical at this point, but many will weaken when you hurry on to describe the post-count party — the good cheer, the drinks, the hot food, and the excitement attendant upon the preliminary compiling of the species list."

Some of us still remember the Regina Bird Count day which featured such a cold, strong wind that the wind-chill factor dropped, it was said, to −100°F, but Doug and Dot Wade's post-count party was worth it!

Then there is the chapter on the game of the Big Day count which is now largely sponsored by the American Birding Association, although it was not the inventor of the sport. To get the most out of a Big Day count there is no doubt that rival teams' members must refine their identification techniques to a remarkable degree. However, his chapter on atlasing breeding birds is one which we should all examine very carefully as it has a serious goal.

Much of Europe is covered but atlasing in North America is still in its infancy with only a few states and provinces involved. However, it is expected that steady progress will be made now that the North American Ornithological Atlas Committee has been established under Chairman M. D. F. Udvardy, Dept. of Biological Sciences, California State University, Sacramento, California 95819. (NOTE: see Appendix IV, p. 582, "Estimating Numbers of Terrestrial Birds", Cooper Ornith. Soc. Studies in Avian Biology No. 6 (price: Can. $27.00 from The Blue Jay Bookshop) for a full account of the project.)

The author also discusses the Breeding Bird Census and the Breeding Bird Survey. The former, now about 50 years old, monitors the density of breeding populations of various species of birds within particular habitats, while the latter, which started in 1965, eventually yields computer printouts which can determine year-to-year population trends based on a widely distributed survey sample.

Finally there is the "Bibliographical Note" which is useful if only to draw the attention of newer birding recruits to the "Master List of Bird Books for North American Readers" and the "Annotated Selection of Regional Bird Books" both appearing in the Oct. 1976 issue of the magazine "American Birds". Neither list is published by Dr. Pistorius but he states that the "Master List" appears in "The Audubon Society Encyclopedia of North American Birds" by J. K. Terres. The lists are particularly valuable because the books are the selections of professional ornithologists. — Reviewed by *Frank Brazier*, 2657 Cameron St., Regina, Saskatchewan. S4T 2W5

A FLORA OF WATERTON LAKES NATIONAL PARK

JOB KUIJT. 1982. The University of Alberta Press, Edmonton. Pp. xxiv + 684, illus. Hardcover $25.00 (out of print), softcover $21.00.

Waterton Lakes National Park is well known for its beauty and is high on the list of tourist attractions in the province of Alberta. Its flora and fauna is especially interesting because of its ecological diversity and uniqueness. Though the province is more than one thousand times as large as the Park, the Park has some 55% of the vascular plants known from Alberta.

The author, Job Kuijt of the University of Lethbridge, is an authority on parasitic vascular plants but is also known for his earlier book "Common Coulee Plants of Southern Alberta". A skilled writer, he is also a talented artist and most of the line drawings that accompany the species descriptions are his.

This flora is set up differently from most in that the arrangement is alphabetical rather than phylogenetic. This departure takes some getting used to but is straightforward. It would have helped in this regard if family names had appeared at the top of each page and if page numbers had accompanied family names in the introductory key.

This reviewer was disappointed with the brief descriptions of the fascinating plant geography, vegetation, and ecology of the area. The author could have easily added another page or two on each and should at least have made reference to literature dealing with the topics. No mention has been made of work that has been done on the fauna and nonvascular flora of the area, even though some of this has been highly enlightening.

No Flora is ever complete, but a shortcoming of this one is the small geographical area that it covers. On page xvii and xviii the author mentions 46 species that occur in the Rocky Mountains close to Waterton Lakes National Park but have not been found in it. These could have been added to the species keys and descriptions but unfortunately this was not done.

This excellent Flora will be appealing to many. The author is to be commended for producing a book of such high quality. Though unfortunately too big to easily carry in a knapsack, it will be a constant reference source to anyone interested in the vascular flora of southwestern Alberta. — Reviewed by *Charles D. Bird*, Box 165, Mirror, Alberta. T0B 3C0

DARWINISM DEFENDED. A guide to the evolutionary controversies.

MICHAEL RUSE. 1982. Addison - Wesley Pub. Co., Reading, Massachusetts. 356 pp. 11 tables and 14 figures.

If you are interested in Darwinism and evolutionary theories, you should read this fascinating book, a subject timely chosen to celebrate the life and work of Charles Darwin since it is a study of evolutionary controversies then and in 1982, the centenary of his death. The author treats his topic by thoroughly assessing evolutionary theories from a broad and philosophical perspective. The front cover carries an appropriate colour photo of "Darwin's Finches" and on the back cover there is a color drawing of the fruit-eating bird — *Tanagra darwini*. Several black and white photographs, charts, tables and graphs enhance an excellent publication.

The book opens with a brief but interesting introduction to the life and achievements of Darwin and an evaluation of changes that have occurred in evolutionary theorizing since Darwin's time and the *Origin of Species*. The author then draws particular attention to contemporary Neo-Darwinism and the relationship between theory and evidence, and further goes on to show that the mechanism of natural selection is bonded to a wide range of biological phenomena, from biogeography to paleontology.

In treating Darwinism and Humankind the author draws attention to the discoveries and theories on the evolution of our own species *Homo sapiens*, bringing into focus a wide range of topics from early Java man to the contemporary and controversial "Lucy", *Australopithicus afarensis*, and not overlooking the scientific fraud — Piltdown Man. In his discussion of the

Neo-Darwinian discipline of sociobiology, we are made to realize that for all existing differences, we are brothers under the skin united by our evolutionary predicament. His closing chapters deal with the relation between Darwinism, ethics and religion, finally turning to "Scientific Creationism." The problems raised by Darwinism for the understanding of man and questions posed by a philosophy of man are evaluated in a thorough manner. These are engrossing questions for the open and inquisitive mind.

This volume will prove fascinating reading to the professional and to the amateur with a keen interest in evolutionary theories. The supplementary reading guide is helpful to those who wish to explore the vast literature on Darwinism. A bibliography gives the reference for every work mentioned in the text, and there are helpful name and subject indices. There are no problems with the binding or printing and the text is free of typographical errors. — Reviewed by *Bernard de Vries*, Box 1043, Fort Qu'Appelle, Saskatchewan. S0G 1S0

MANITOBA'S BIG CAT. THE STORY OF THE COUGAR IN MANITOBA

ROBERT E. WRIGLEY and ROBERT W. NERO. 1982. Manitoba Museum of Man and Nature, Winnipeg, Manitoba. 68 pp. $6.95.

Writing a book about a creature which probably numbers less than 100 in Manitoba and is so elusive that neither of the authors has personally seen one, is a task that would only be attempted by two biologists. In spite of these problems, Robert Wrigley and Robert Nero have succeeded admirably in providing a highly readable account of the Cougar in Manitoba, especially remarkable when only 10 years ago people were very skeptical that Cougars even existed in that province.

The life history of the Cougar is described and then related to Manitoba by adding appropriate examples of the documented cougar sightings in Manitoba since 1879. If one wants to learn about Cougar biology and ecology, the foreword along with the first portion of each chapter suffice; to learn about Manitoba cougars, one reads the chapter on distribution and the sightings that flesh out seven of the ten chapters. The book includes almost one in every six of all 436 sightings, most of which have occurred since 1950, with more than half since 1970.

The authors demonstrate how Cougar distribution in Manitoba has expanded since 1940, closely paralleling the range of the White-tailed Deer, the Cougar's probable principal prey. Well-forested river valleys offering dense cover and concentrations of White-tailed Deer constitute prime Cougar habitat.

The book is not designed for the biologist interested in large feline predators, nor does it purport to be. Written with naturalists and outdoorspeople of Manitoba in mind, it should be successful in capturing their attention. If anything detracts from the book, it may be the inclusion of too many descriptions of a "big cat with a long tail" and too much about Manitoba's major ecological regions in the chapter on where cougars live. Quality of the writing and production is very high; excellent colour photographs by Maurice Hornocker and superb drawings by Dwayne Harty only add to it. *Manitoba's Big Cat* will be of interest to prairie province naturalists, especially those with a fondness for elusive animals. — Reviewed by *Hugh M. Hunt,* 2950 More Crescent, Regina, Saskatchewan. S4V 0T7

THE SQUIRRELS OF CANADA

S. E. WOODS, Jr. 1980. National Museums of Canada, Ottawa, Ontario. 208 pp. Hardcover $29.95.

This book covers the 22 species of squirrels known to inhabit Canada. Each species is illustrated by a colour photograph and one or more line drawings (by Dwayne Harty from Regina). Two distribution maps, one showing distribution in Canada, the other showing range in North America, are presented for each species. Each species account has sections on common names, description, range, behaviour, personality, habitat, feeding habits, life cycle, natural enemies, relations with humans and where to observe. For the most part the information appears to be accurate, is definitely well presented and easy to read. The book is aimed at the layman rather than the professional and technical language is kept to a minimum, though the book has much useful information for professional mammalogists.

I have few complaints with this book. I was somewhat irritated by being told at least five times that *Spermophilus* means lover of seeds. There is no referencing of data in the text, making it

Golden-mantled Ground Squirrel *Wayne Lynch* very hard to locate the sources of information. The list of references consists mostly of old publications with virtually nothing since 1970 referred to, and I somehow doubt that the dirth of 1970's references truly reflects the lack of publications during the decade. I did some checking of data presented by Banfield in *The Mammals of Canada* (1974, Nat. Mus. of Canada, U. of Toronto Press, Toronto) and noted very few discrepancies (one example being weight of Red Squirrels given by Woods as 230 gm while Banfield gives 190 gm) but one cannot check Woods' references for confirmation of his data.

I highly recommend this book to all who are interested in Canada's squirrels. — Reviewed by *Wayne C. Harris*, Box 414, Raymore, Saskatchewan. S0A 3J0

NATURAL HISTORY NOTEBOOK No. 5

D. RUSSELL and D. HARINGTON. 1981. National Museum of Natural Sciences, Ottawa. 108 pp. 52 illus. Paperback $2.50.

The fifth in this series of Natural History notebooks was published in April 1982. This one deals with prehistoric life, mostly dinosaurs and ice age mammals. There are 52 pages of text with illustrations and blank pages for your notes between. Information is given on material that has been found in Canada and that which is preserved in the National Museum of Natural Sciences in Ottawa. (Notebook No. 3 was reviewed in the March 1982 *Blue Jay*).

WATERSHED RED

KATHY MARTIN. 1981. Ragweed Press, Charlottetown, Prince Edward Island. 153 pp. Paper $6.95.

This book, subtitled "The Life of the Dunk River, Prince Edward Island", focuses attention on the Dunk river whose mouth is across the bay from Summerside, and is one of many small rivers found on the island.

In the preface, Dr. Ian MacQuarrie presents a very adept description of this book:

> "People rate rivers in different ways, for purposes of transport, power or poetry. From this book it is evident that Kathy Martin has a high opinion of the Dunk and its inhabitants. She writes for people who want to *know*; she enquires politely but thoroughly into the lives of mosquito, muskrat and osprey, of fish and fisherman, of the hunter and the hunted. She writes with the enthusiasm of a biologist in love with her subject. At times there is anger, always controlled, but the kind of anger one feels at waste or misuse, at beauty unappreciated or destroyed. Problems are not minimized, neither are they ignored. She describes the landscape as it lives . . ."

The book is illustrated with quality pen and ink sketches by Connie Pound-Gaudet. Overall, I found the book to be well written, in a style which was interesting and easy to read. — Reviewed by *Wayne C. Harris*, Box 414, Raymore, Saskatchewan. S0A 3J0

LETTERS

ROBINS AND HUMANS

Seven years ago my husband and I decided to abandon the perils of city life and move into an environment we both loved, the boreal forest of northern Saskatchewan. We built a well insulated, well sealed log house about 32 km north of Otter Lake. When we started to build, the site was a tangle of overgrown black spruce. Our first garden was almost comical.

As the years have passed we have become keen observers of the wildlife around our house, particularly the birds, and especially the migrant birds which indicate the passing of the seasons. The dead wood and brush around the house have gradually found their way into the stove and heater. The area around the house which was once quite a jungle is now open, and our productive garden covers about an acre.

In 1980 with the spring bird arrivals we noticed a pair of American Robins for the first time. They stayed around the house for a few days before moving on to more suitable nesting habitat. In 1981 we noticed another, or perhaps the same pair, but they likewise moved on. In 1982, however, a pair of robins stayed near the house to nest. They delighted the whole family with their orange breasts and beautiful voices. We look forward next spring to one beneficial result of the minor habitat modification we have caused — we expect to have the robins return.

Robins are not rare in local birch-poplar stands in summer. However, they are secretive and wary compared to the robins around the house and garden.

We carefully conserve mineral and organic nutrients. This is a matter of aesthetics as well as economics; we produce about half of our food from land which was naturally very nutrient deficient. As a result we do not expect our presence to lead to colonization by birds which are associated with discarded food such as House Sparrows and

Robins *Hans Dommasch*

Starlings. On the other hand, Barn Swallows have been by to investigate our house for potential nest sites. We also built eight nest boxes mounted on poles inaccessible to Red Squirrels. The nest boxes have been used by mosquito eating Tree Swallows. — *Ann Jeffries,* Box 1409, La Ronge, Saskatchewan. S0J 1L0

(**Editor's Note.** Ann's husband, Clark, is a mathematician and consultant. He manufactures a type of wind turbine and alternator available in kit form. Ann formerly worked for the Canadian Nature Federation office in Ottawa. The canoe trip to their house includes nine portages. They power their lights, washing machine, stereo, radios, telephone, typewriter, lathe, table saw, welder, hand power tools, and vacuum cleaner with wind generated electricity. Their two daughters obtain their education by means of a correspondence course.)

BIRDS AND WEATHER 1982

I would like to relate of birds and the May 28 storm. A mother wren died here and at the neighbors a wren, also a nest of young robins.

This fall during snow and cloudy weather a nest of barn swallows was deserted. I saw one after it fell to the ground — I brought it in but it died minutes later. The two remaining ones flew a short distance and returned to the power line near the house. I went out and dug earth worms and threw them up past their "noses" so to speak, but they made no attempt to catch any. They disappeared shortly after, I presumed to go back to their nest. I investigated but the nest was at the peak of the garage and I couldn't reach it. It remained cool and cloudy for a week afterwards — certainly no evidence of insects flying. — *Hertha McCorriston*, R.R. 1, Site 2, Box 12, Ridgedale, Saskatchewan. S0E 1L0

BOTANIZING FROM AFAR

I watch all nature programs on color television, which I always find interesting and highly educational. A short time ago, I viewed a film by Marlon Perkins of "Wild Kingdom", showing from a helicopter the capture and tagging of moose calves in the Cumberland Delta area of northeast Saskatchewan. The purpose of this study, conducted by Saskatchewan Wild Life Biologists, is to determine the cause of high mortality of moose calves during the first summer, and I shall be interested in the results of this study when it is available.

This film, like many others, had an added interest for me. As a botanist, I was able to determine from the low-flying helicopter, with its excellent color photography, the following plant species present: Black Spruce (*Picea mariana*), Tamarack (*Larix laricina*), Cattail (*Typha latifolia*), Bulrush (*Scirpus validus*), Reed Grass (*Phragmites australis*), Alaska Birch (*Betula neoalaskana*), Saskatoon in flower (*Amelanchier alnifolia*), and an abundance of a tussock sedge, (probably *Carex aquatilis*). — *August J. Breitung*, 4213 Los Coyotes Diagonal, Lakewood, California. 90713

(**Editor's Note:** Mr. Breitung is a former resident of McKague, Saskatchewan and probably best known for his 1957 publication entitled *Annotated Catalogue of the Vascular Flora of Saskatchewan* published in the *American Midland Naturalist.*)

WHITE-TAILED PTARMIGAN

I thought *Blue Jay* readers might like to know that the photographs of the White-tailed Ptarmigan in the last issue were of a male in mid summer on the left; the bird on the upper right was an immature photographed in September. — *G. L. Holroyd,* Box 1343, Banff, Alberta. T0L 0C0

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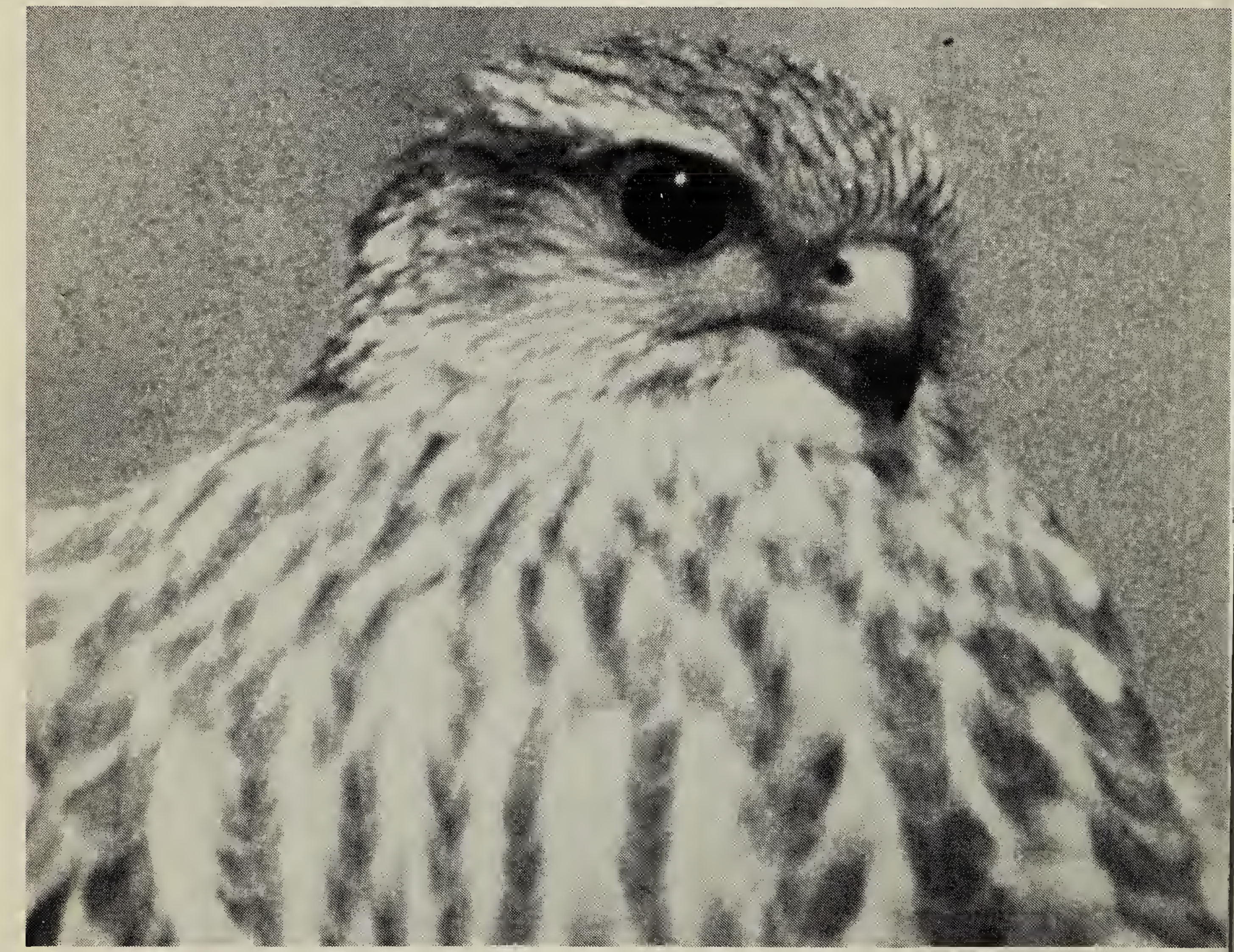

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